THE BOSTON
Medical and Surgical
JOURNAL

VOLUME 193 OCTOBER 15, 1925 NUMBER 16

The Massachusetts Medical Society

THE REDUCTION OF THE DEATH RATE FROM DIABETES, PARTICULARLY FROM DIABETIC COMA, IN MASSACHUSETTS*†

BY ELLIOTT P. JOSLIN, M.D.

DIABETES IN LONDON AND MASSACHUSETTS COMPARED

LONDON with a population of 7,625,461 in 1923 reports 725 deaths from diabetes; Massachusetts with a population of 3,969,536 records 852 deaths. In London the diabetic death rate per 100,000 was 9.51, in Massachusetts 21.4. In 1880 in Massachusetts 83 individuals succumbed to diabetes, by 1923 the increase in numbers had been tenfold, and the death rate had risen about fourfold. For the same period in England and Wales the increase in the diabetic death rate was nearly threefold. (4.1-11.9, rate for 1922.) For the year 1880 in Massachusetts there was 1 death from diabetes in 425 deaths, for this last year, 1924, there was 1 death in 64 deaths. The doctors in Massachusetts, therefore, have a diabetic problem on their hands. Their patients are more than twice as liable to die of diabetes as citizens of London and the increase in the incidence of diabetes among their patients is far more rapid.

DIABETES DECREASES IN MASSACHUSETTS

Yet encouraging features for Massachusetts exist today and even from the gloomy statistics first cited at least two such features can be deduced. The rate of increase of diabetes in this community has been steadily decreasing and for the last five year period is less than in any five year period since 1880. Furthermore the total diabetic deaths (772) in 1924 were less than for any of the last 9 years, save for 1918 and 1919, when war conditions may have interfered with the reliability of the data, due to the reduction of doctors and perhaps of food. This decreasing rate of increase of diabetes is all the more notable because it is going on despite the increasing percentage of Jews in our midst and is evidence that the Hebrew race is but slightly responsible for our high diabetic mortality. If modern fashions in clothes are continued for a few years I

TABLE 1

TOTAL AND DIABETIC MORTALITY IN MASSACHUSETTS

Year	Number of deaths from Diabetes	Death rate per 100,000 population	Number of deaths from all causes	Death rate per 10,000 population all causes
1880	83	4.7	35,292	197.9
1881	90	5.0	36,458	201.0
1882	110	6.0	36,785	199.4
1883	101	5.4	37,748	201.1
1884	99	5.2	36,990	190.4
1885	116	6.0	38,094	196.1
1886	136	6.9	37,224	186.3
1887	150	7.3	40,763	198.3
1888	146	6.9	42,097	199.0
1889	139	6.4	41,777	192.0
1890	188	8.4	43,528	194.4
1891	179	7.8	45,185	197.5
1892	202	8.6	48,762	208.4
1893	214	8.9	49,084	205.2
1894	248	10.1	46,791	191.3
1895	232	9.3	47,540	190.2
1896	237	9.3	49,381	193.0
1897	284	10.8	47,419	181.1
1898	271	10.1	46,761	174.5
1899	293	10.7	47,710	174.0
1900	330	11.8	51,156	182.4
1901	319	11.2	48,275	169.4
1902	379	13.1	47,491	164.4
1903	409	14.0	49,054	167.4
1904	420	14.1	48,482	163.2
1905	427	14.2	50,486	167.4
1906	422	13.7	50,624	163.9
1907	479	15.1	54,234	171.5
1908	451	14.0	51,788	160.1
1909	512	15.5	51,236	154.9
1910	575	17.0	54,407	161.0
1911	631	18.3	53,062	154.0
1912	585	16.7	52,400	149.3
1913	621	17.4	53,402	149.3
1914	630	17.3	52,978	145.5
1915	673	18.2	53,131	143.5
1916	783	21.0	56,366	150.9
1917	776	20.6	56,628	150.3
1918	680	17.9	78,842	207.4
1919	633	16.5	52,345	136.5
1920	796	20.6	53,632	138.6
1921	777	19.9	47,780	122.4
1922	948	24.1	51,115	129.9
1923	852	21.4	52,380	132.0
1924	772	19.3	49,466	123.6

---

*Without the help of Miss Angeline D. Hamblen of the Massachusetts State Department of Public Health this paper could not have been written, and I hereby express my indebtedness.—E. P. J.

†Read at the annual meeting of the Massachusetts Medical Society, in Boston, June 9, 1925.

believe that soon this race will not be notable for diabetes. Already it is as rare to see a Jewish doctor who is above normal weight as it is an educated Jewish boy or girl, man or woman, who is fat.

FALLACIES IN DIABETIC STATISTICS

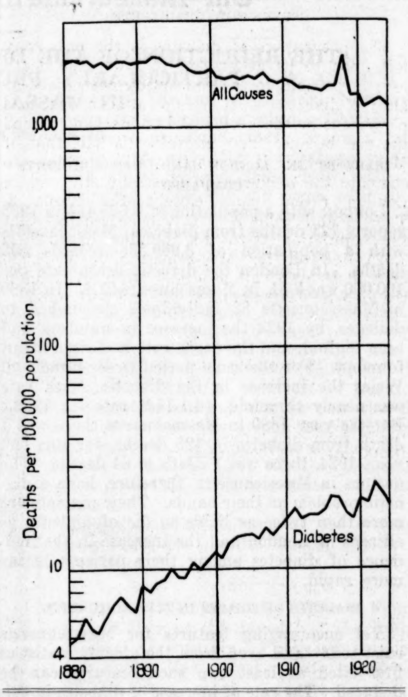
Actual improvement in the diabetic situation may not be disclosed by statistics of recorded deaths. In the next few years it is quite possible that diabetic deaths may increase despite improvement in treatment. Once diabetic, always diabetic is the general rule and the safe rule to promulgate, but the diabetic of today lives long and in a few years there will be so many diabetics living that of necessity a large number must die. Eventually an equilibrium will be struck and the trend of diabetes will then appear as a secondary cause of death, just as in the postponed deaths of arrested tuberculosis. My diabetic children, treated with insulin since August 7, 1922, illustrate this. There have been 130 of these under 15 years of age and 120 were alive in May 1925. Already they have lived as long as 152 of my fatal diabetic children treated without insulin, yet should these living boys and girls die later of some intercurrent disease they would swell the diabetic mortality for that future year and the significance of their prolonged lives be lost. In chronic as well as in acute disease we all want to report cures and ultimately may hope to do so, but for the present we are restricted to the element of the duration of the disease and as a measure of effectiveness of treatment this is even more important than the death rate.

Another fallacy in diabetic statistics is shown very well by comparing the mortality of diabetes in different states of the United States. Thus for the year 1922 New Hampshire is credited by Emerson and Larimore[1], with the diabetic death rate 31.1 per 100,000 population, whereas if adjustments are made for the differences in age and sex composition of this state and the death rate recalculated on the basis that all the states have the same population of males and females, and the same proportion of population in each age group, the death rate from diabetes would drop to 22.9 per 100,000. This is of great significance, because diabetes is so much more frequent in advanced age that if a community chanced to have many old people its death rate would seem disproportionately high. This will not account for the differences in diabetic mortality between Australia, England, the United States and Massachusetts. In Australia the death rate for 1922 was 12.3 per 100,000, which is quite the same as a matter of fact as that of England and Wales, which was 11.9 per 100,000, and two-thirds as large as for the United States, which was 18.4, and but half that of Massachusetts, which was 24.1.

Bearing in mind these statistical pitfalls, one should be slow in attempting to draw a relation between the diabetic death rate and certain possible etiological factors such as the consumption of sugar per pounds per capita. In Australia it was 112 pounds per capita, in England 70 pounds, and in the United States 103.2 pounds per capita for 1922.

CHART 1

THE TOTAL MORTALITY AND THE DIABETIC DEATH RATE IN MASSACHUSETTS



The statistics for Australia, England and the United States were based on the estimated mean population for period 1901-1910 and reported deaths 1901-1910. The statistics for Massachusetts were based on the estimated population

TABLE 2

COMPLETE EXPECTATION OF LIFE IN AUSTRALIA, ENGLAND, THE UNITED STATES AND MASSACHUSETTS 1901-1911

Age groups	Australia		England		United States		Massachusetts	
	M	F	M	F	M	F	M	F
At birth	55.2	58.8	48.5	52.4	49.3	52.5	49.3	53.1
At 30 years	36.5	39.3	34.8	37.4	34.8	36.8	34.6	36.8
At 45 years	24.8	27.6	23.3	25.5	24.1	25.5	23.3	25.3

July 1, 1910, and on reported deaths 1909-1911.

There are still other errors in diabetic statistics. A diabetic who dies of tuberculosis, diphtheria, typhoid fever or strangulated hernia, may escape detection. The prominence of the disease tuberculosis may lead to the omission of a record of diabetes in the death certificate or, even if inserted, it may be disregarded in statistical summaries.

PREVENTION OF DIABETES

The prevention of diabetes is the only way left open to us at present to lower the death rate if we hold to the conception once diabetic, always diabetic. It would appear that the physicians or the people of London had learned the art, because their mortality is half that of Massachusetts. It is worth while therefore to compare the incidence in Massachusetts and in London rather more closely. See Table 3, Table 4 and Table 5. It will be recalled that the population taken for London in 1923 is 7,625,461 and for Massachusetts is 3,969,536 or a little over half as great, while in London the diabetic deaths number 725 and with us 852.

TABLE 3

TOTAL AND DIABETIC MORTALITY IN MASSACHUSETTS IN 1923—ARRANGED IN SUCCESSIVE AGE GROUPS

Deaths from all causes in Massachusetts	52,380
Death rate per 1,000 population	13.2
Deaths from diabetes mellitus	852
Death rate per 1,000 population	0.214

Age	Population*	Deaths from all causes	Rate per 1,000 population	Deaths from diabetes	Rate per 1,000 population
Under 5	406,257	9,653	23.8	5	.012
5- 9	383,262	1,000	2.6	7	.018
10-14	351,052	607	1.7	11	.031
15-19	304,147	813	2.7	13	.043
20-29	682,685	2,541	3.7	21	.031
30-39	628,629	3,287	5.2	32	.051
40-49	531,343	4,506	8.5	59	.111
50-59	385,714	6,578	17.1	187	.485
60-69	222,839	8,939	40.1	297	1.333
70-79	99,135	8,777	88.6	170	1.714
80-89	26,970	4,854	180.0	48	1.780
90-99	2,404	787	327.4	2	.832

*Estimated as of July 1, 1923.

From Table 5 it appears that under the age of 20 years and above the age of 50 years Massachusetts has more diabetic deaths than London. Between 20 years of age and 50 years London has more diabetic deaths than Massachusetts. In both localities there is a steady increase in total deaths from diabetes as age advances.

The percentage distribution according to age groups also corresponds to the distribution based on cases. Under 15 years of age in Massachusetts the diabetic deaths formed 2.7 per cent of all the diabetic deaths; in London 2.1 per cent.

TABLE 4 (SECTION A)

TOTAL AND DIABETIC MORTALITY IN LONDON IN 1923 ARRANGED IN SUCCESSIVE AGE GROUPS

Population of Greater London 7,625,461

Age	Deaths from all causes		Deaths from diabetes	
	Male	Female	Male	Female
0- 1	4,891	3,613	0	0
1- 2	1,028	890	2	0
2- 5	947	881	0	1
5-15	1,210	1,130	9	3
15-25	1,771	1,870	7	14
25-45	5,085	4,686	44	51
45-65	12,139	9,508	131	171
65-75	7,628	7,686	95	96
75+	6,318	9,995	36	65
	41,017	40,259	324	401

Deaths all causes	81,276
Death rate all causes per 1,000 population	10.66
Deaths from diabetes	725
Death rate from diabetes per 1,000 population	9.51

Number of deaths from diabetes in Greater London redistributed to make the age groups in above Table comparable with those of Massachusetts as shown in Table 3. For the data originally used in the compilation of this table I am under obligation to Professor George Graham of London.

TABLE 4 (SECTION B)

NUMBER OF DEATHS FROM DIABETES IN GREATER LONDON REDISTRIBUTED

1923

Age groups	Male	Female
Under 5	2	1
5- 9	4	1
10-14	5	2
15-19	4	7
20-29	11	15
30-39	26	26
40-49	43	54
50-59	65	89
60-69	80	92
70+	85	113
	325	400

TABLE 5

DIABETIC MORTALITY IN MASSACHUSETTS AND LONDON COMPARED

ARRANGED IN SUCCESSIVE AGE GROUPS FOR 1923

Age Groups	*Massachusetts*			*Greater London*	
	Deaths	Per cent for age group	Rate for 1,000 population	Deaths	Per cent for age group
Under 5	5	—	.012	3	—
5- 9	7	—	.018	5	—
10-14	11	—	.031	7	—
15-19	13	—	.043	11	—
20-29	21	2.5	.031	26	3.5
30-39	32	3.8	.051	52	7.2
40-49	59	6.9	.111	97	13.4
50-59	187	21.9	.485	154	21.2
60-69	297	34.9	1.333	172	23.7
70+	220	25.8	1.711	198	27.3
	852			725	

Between 20 and 29 years in Massachusetts the percentages are likewise not dissimilar, Massachusetts 2.5 per cent, London 3.5 per cent. Between 30 and 39 years in Massachusetts the per cent is 3.8 in Massachusetts but nearly twice as great, 7.2 per cent in London. Again between 40 and 49 years of age the London figures are far greater, thus Massachusetts 6.9 per cent, London 13.4 per cent. In the sixth decade there is an abrupt reversal of the relative proportions, and this is accentuated by the figures of the seventh decade. Between 50 and 59 years in Massachusetts the per cent is 21.9, in London 21.2; between 60 and 69 years in Massachusetts the per cent is 34.9, in London 23.7. From 70 years onward the percentages for the two localities were about as close as for the years under 20. The per cent for Massachusetts was 25.8 and for London 27.3.

Under 20 years of age the differences in the relative proportion of deaths in Massachusetts and London may be disregarded because the total deaths are too few for accuracy. Between 20 and 29 years the percentages are nearly alike. The most important difference comes between the years 30 and 49 when the percentage of deaths in London is twice that of Massachusetts for similar years of life. In the sixth decade and eighth decade on they are alike though for the seventh decade the Massachusetts figures are half again as large as those of London.

I cannot understand why London has nearly twice as many diabetic deaths in middle life as Massachusetts and yet the total London diabetic death rate is only half as great. Sixty per cent of the deaths from diabetes in Massachusetts are over 60 years of age compared with 50 per cent for London. Diabetes is far more of a disease of old age in Massachusetts than in London. In this discussion however we are considering the age at death and we must not forget that the age at onset is a decade earlier, the fifth for London, the sixth for Massachusetts providing the duration of the disease is the same. Bearing in mind the number of individuals living in Massasetts under 5 years and between 70 and 79 years, diabetes is 163 times as frequent in the latter period.

The small number of deaths from diabetes under 5 years of age seems extraordinary both for London and Massachusetts. In London the number for 1923 was 3 and for Massachusetts was 5. At present I have four Massachusetts diabetic children under my care who are under 5 years of age.

Preventive efforts to lower our Massachusetts diabetic death rate, therefore, should be concentrated upon the older fifth of our population, i.e. upon those who have lived above 50 years of age. Here it is that we should vie with London and reduce our mortality to its level. So far as I know the only means at our disposal are to urge our patients to eat less food and to take more exercise, because only in this way shall we avoid obesity.

SEASONAL VARIATION IN MORTALITY

The monthly distribution of deaths from diabetes in Massachusetts during 1923 was uniformly high during January, February, March and April. It varied within comparatively narrow limits for the remainder of the year. Oddly enough it was lowest in November. See Table 6.

TABLE 6

MONTHLY DISTRIBUTION OF DEATHS FROM DIABETES IN MASSACHUSETTS IN 1923

January	96	August	65
February	100	September	54
March	99	October	61
April	91	November	44
May	59	December	64
June	65		
July	54	Total	852

URBAN AND RURAL MORTALITY

Towns in Massachusetts with a population of less than 5000 contain 10 per cent of the inhabitants of the state. They contributed 96 diabetic deaths or 11 per cent of the total for 1923. This is but a trifle in excess of their proportion of the state's diabetic deaths. Since diabetes is not a disease distinctively of the country or the city one will watch with interest any change in mortality which may occur as a result of the use of insulin in these two sections of the state.

The first reports of the Metropolitan Life Insurance Company indicated that insulin was more generally used in the cities. Let us hope that it will be used more everywhere and particularly in the country, because of the gift of Mr. John D. Rockefeller, Junior, of a bottle of Doctor's Emergency Insulin for the doctor's bag.

DOCTOR'S EMERGENCY INSULIN

This distribution of insulin by the Massachusetts State Department of Health is a matter of considerable significance for two reasons. First, it emphasizes the entry of the state upon a campaign to eradicate a non-infectious chronic disease. Second, unlike most health campaigns which are for the young, this health campaign, as is likely to be the case with future health campaigns, deals increasingly with the old. Witness likewise the efforts to combat cancer[2], [3].

CAUSES OF DEATH

Of the 852 diabetic deaths in Massachusettts, there were 233 recorded simply as diabetes. This is unfortunate. Few diabetics die of uncomplicated diabetes, particularly if diabetic coma is excluded from the category. Presumably coma figured largely in these 233 "diabetic deaths." The chief cause to appear next

is coma and with it may be classed acidosis making together a total of 116 deaths.

TABLE 7

Causes of Death from Diabetes in Massachusetts in 1923 as Obtained from Death Certificates

Diabetes	233	
Diabetic Coma	116	
		349
Cardio-renal		247
Gangrene		105
Pulmonary		84
Carbuncle		17
Miscellaneous		50
		852

Coma, therefore, is the chief cause of death in diabetes which we have to combat in Massachusetts. It occurs so frequently and yet can be so successfully treated that the number of coma deaths should be greatly reduced. Until insulin was discovered, it was almost unheard of for a case of coma to recover, but now it is exceptional in a hospital for a patient with coma to die. Thus, at the New England Deaconess Hospital during 27 successive months there were admitted 33 cases of diabetic coma with but 2 deaths. The success attained there is largely attributed to the promptness with which physicians sent in their cases for treatment.

The methods of treatment employed in coma were recently published and sent with the package bottle of Doctor's Emergency Insulin to physicians in Massachusetts outside of Boston. The original article appeared in the Boston Medical and Surgical Journal in connection with that of Dr. Kelly's just cited. A more comprehensive study has also been made, based upon these 33 cases in association with Howard F. Root, and Priscilla White[4]. It is unnecessary, therefore, to repeat what has been discussed so much in detail elsewhere. I will, however, record the scheme of treatment now being carried out at the New England Deaconess Hospital, because this contains certain features not described in the former article published in the Boston Medical and Surgical Journal.

Treatment of Diabetic Coma

Duties of Nurse. A. Preparations for Reception of Patient: (1) A warm bed with blankets in place of sheets and at least 4 hot-water bags. (2) The necessary equipment in readiness at the bedside for catheterization, for a soapsuds enema, for gastric lavage, for subpectoral infusion of normal saline, for administration of caffein and insulin.

B. Care of Patient: (1) Secure specimen of urine, by catheter if necessary. A specimen of urine is to be tested for sugar and di-acetic acid every hour until recovery. If a self-retaining catheter is to be left in the bladder, urotropin (10 grains) should be given every four hours for three doses. (2) Hourly records of the pulse and two-hourly records of the respiration rate and temperature are to be kept. (3) Enema.

Duties of Physician. A. Examination of Patient.

B. Constant attendance until the crisis is passed.

C. If diagnosis of coma is confirmed, write necessary orders for treatment with especial reference to (1) gastric lavage, (2) the method and rate of administration of liquids by mouth, rectum, or subcutaneously, (3) the diet, (4) caffein, and (5) insulin.

The purpose of gastric lavage is to prevent or relieve gastric dilatation.

Liquids by mouth must be given hot and at a rate not to exceed 100 c.c. an hour. Liquids by rectum, salt solution, black coffee, or tap-water, may be given every two hours for two doses and thereafter every four hours. If the patient is dry, unhesitatingly give salt solution subpectorally, except in the presence of pulmonary râles, when it may be given under the skin of the thighs. If the intravenous route is preferred, give very slowly 250 to 500 c.c. and no more until at least an hour has elapsed. One c.c. of adrenalin from a sterile ampoule may be added to the salt solution when the systolic blood pressure is below 90.

The diet should not contain more than carbohydrate 50 grams, protein 25 grams, and fat 25 grams in the first twenty-four hours unless warranted by unusual improvement of the patient. This diabetic prescription is represented by oatmeal 30 grams dry weight, equivalent to 500 grams as thin gruel, orange juice 250 grams (the juice of two small oranges), the whites of 5 eggs, and medium cream 120 c.c. Broths, coffee, tea, cocoa shells may be utilized as vehicles for the above.

Caffein sodium benzoate is injected subcutaneously, 5 grains every hour for four doses, and thereafter as indicated.

The gravity of the coma is evidenced by the degree of stupor, the exhaustion of the patient as shown by a rectal temperature of 95° F. or below, by circulatory collapse with blood-pressure below 80 systolic, dry mucous membranes and skin, soft eyeballs, and by hemorrhagic vomitus or gastric contents. Air hunger, if slight but definite at first, increases to a maximum, and toward the end gives way to shallow respiration.

The size of the first dose of insulin in coma depends upon the doctor's estimation of the probable number of hours the patient can live without insulin. If the patient's expectation of life is twenty-four hours, one would inject 20 units and repeat every hour until clinical improvement and sugar in the urine or blood is approaching normal; if the patient's expectation is twelve hours, one would inject 40 units and repeat the dose in the same manner, changing the quantity to 20 units as the state of the patient warrants; but if the expectation is only six hours, one would inject 40 units every thirty minutes until improvement is manifest. Finally, in a case like our Case No. 3021, who died three and a half hours after entrance, we should now give 40 units of insulin every fifteen minutes. We never intend to have a patient at the New England Deaconess Hospital come up to within two hours of death from coma without having received at least 150 units of insulin in the preceding hour.

Cardio-renal complications stand next to coma in importance. Doubtless they will soon exceed the number of deaths due to coma. This is because such complications are the common ones for the age period at which the diabetics live. Fortunately the accurate, dietetic treatment of the diabetes works admirably with patients who have high blood pressure and lesions of the kidney.

Diabetic gangrene requires prompt treatment. This is a combined medical and surgical problem. The deaths which occur usually result from carelessness and procrastination. It is not necessary again to describe the treatment of gangrene, because articles upon this have appeared so frequently. Prevention here is one of the chief factors; promptness in the use of the most modern surgical measures is of prime importance. Our results have improved markedly since the ultra violet ray and exercises with the Buerger board have been added to the technique.

Tuberculosis still claims a certain per cent of the deaths, probably about 6 per cent, but no more than the standard rate for tuberculosis in the community at large. The onset of tuberculosis is usually unsuspected, so slight are the symptoms and insignificant the signs. One must make it a rule to look for it in any frail diabetic. Unfortunately, in our statistics the number of deaths from tuberculosis is not given and as above recorded it is possible that certain cases of diabetes are statistically lost because included under tuberculosis. Eighty-four of the cases succumbed to non-tuberculous pulmonary disease.

Deaths from carbuncles are pathetic. I suspect that most fatalities could be avoided with early energetic treatment carried out in a hospital by surgeons who will work in close conjunction with physicians. The mortality is distressing in cases treated at the office and in neglected cases. Crucial incisions must reach to the sound tissue, the flaps should be turned up and the necrotic tissue scarified repeatedly so that after a few days of packing with poultices of normal saline solution sloughing can easily ensue. Ultra violet rays help in the convalescence.

REFERENCES

1 Emerson and Larimore: Arch. Int. Med., 1924, 34, 5.
2 Kelley: Boston Med. and Surg. Jour., 1925, 192, 20.
3 Joslin: Boston Med. and Surg. Jour., 1925, 192, 20.
4 Joslin, Root and White: Med. Clin. of No. Amer., 1925, 8, 1873.

ORIGINAL ARTICLES

GLUCOSE INFUSIONS AND INSULIN IN THE PREPARATION OF POOR SURGICAL RISKS*

BY DAVID FISHER, M.D., AND EDMUND H. MENSING, M.D.

Recent developments of the use of glucose infusions and insulin in pre-operative acidosis, in shock and in starvation have given the internist and surgeon an effective method whereby a poor or hopeless risk can in a comparatively short time be transformed into a good or fair risk. There are sufficient number of cases on record of the specific action of glucose infusions and insulin in non-diabetic acidosis[1] to give this a distinct clinical basis, and the same method has in 18 cases of shock[2] in our hands proved effective. The same results in shock have been obtained in a few cases by Crile[3], Ochsner[4], and others.

The two classes to be considered in the pre-operative preparation of poor risks are (1) emergency cases and (2) general routine cases.

The mortality rate in emergency surgery is necessarily comparatively high, due not so much to the pathology present as it is to the complication cauesd by this pathologic condition. In this type of case, surgical intervention is in the great majority of cases necessary, irrespective of any contra-indication present, hence any method whereby these grave complications can be removed or diminished in severity before or during the operation will proportionately reduce this mortality rate.

The conditions generally encountered are (1) acidosis, (2) shock, (3) incessant vomiting with or without acidosis. Pre-operative acidosis when present is a dangerous complication, especially so since the ketosis is aggravated by the anesthesia. This ketosis, if allowed to persist, lowers the alkaline reserve, causes vomiting, the vomiting in turn increases the acidosis, and a vicious cycle is soon established. The following case report shows how a severe pre-operative acidosis requiring immediate surgery was quickly transformed into a good risk by the use of glucose infusions and insulin.

Case 1. Mr. S. D. was admitted complaining of severe abdominal pain. Three months ago his gall bladder was drained at another hospital for gall stones. One day before admission he was seized with sudden severe pain beginning and remaining in the epigastrium. Vomiting was an early symptom and has persisted since the onset. The pain gradually became more severe up to the time of admission. Physical examination showed generalized jaundice. The upper right rectus scar of the previous operation was well healed. The abdomen was full tense, with rigidity and tenderness in all quadrants. The temperature was 97.6, pulse 168, and respirations 28. The pulse was of very poor quality, and thready in character. The urine was highly colored, acid, specific gravity 1.032, acetone and diacetic acid four plus. Bile was present. Before operation, the patient was given 1,000 c.c. of a ten percent glucose solution intravenously and 50 units of U20 insulin subcutaneously over a period of two hours. Two hours following the administration, the pulse volume was good, rate 118, temperature 99, respirations 22. Operation disclosed a perforated gall bladder with the abdomen full of pus. At the termination of the operation the pulse was full, bounding, rate 120, respirations 24, and temperature 100. Urine examination at this time showed acetone two plus and diacetic acid one plus. Both the acetone and diacetic acid were absent in a specimen examined three hours later. The glucose infusion and insulin quickly relieved the acidosis, both internal and external, increased the circulating fluid volume in the blood stream and allowed the patient to undergo the operation without ill effects. Convalescence from here on was uneventful.

---

*From the surgical service of the National Military Hospital, Milwaukee, Wis.

The second grave complication encountered is shock. In shock we have an initiating factor and a sustaining factor. The cause of the former is a disputed question, the latter Cannon[5] has shown to be due to a low blood pressure, caused by an actual decrease in the circulating fluid volume. The problem in shock is principally the problem of internal respiration, the internal asphyxia and acidosis. The low blood pressure is but a single symptom in the clinical picture and stressing this point is not attacking the condition at its source. We simply attempt to maintain blood pressure in order to promote internal respiration and to remove the internal acidosis. O'neill, Manwaring and Bing Moy[6] have shown that in anaphylactic shock there is a disappearance of glycogen from the liver; Richter[7] has shown that glucose and insulin cause the deposition of glycogen in the liver; Brahme[8] has recently demonstrated that insulin increases tissue respiration. The increases amounted to 42 and 28 percent of CO_2 production, and 44 and 27 percent of oxygen intake. Glucose infusions in such cases first increase the circulating fluid volume, thereby helping to maintain the blood pressure; the introduced insulin causes the rapid oxidation of the glucose, furnishing immediate heat energy to the tissue cells, promoting internal oxidations, and increasing tissue respirations; glycogen is stored in the liver; the metabolic rate, which in shock shows an average decrease of 33 per cent, is increased, and the patient in a very short time is transferred from the hopeless to the hopeful class. The following case report is a typical example of the pre-operative preparation of a patient in shock.

Case 2. Mr. J. M. was admitted for acute abdominal pain and vomiting. Five hours before he was seized with severe epigastric pain and vomiting. The pain persisted in the epigastrium and increased in intensity. Before this attack he had been suffering with "stomach trouble," usually after meals. Examination showed an anemic individual in intense pain. The abdomen was level, rigid all over, with generalized tenderness. The pulse was small, thready, rate 166, temperature 96.4, and respirations 36. The blood pressure was 90 systolic and 40 diastolic. He was at once given 1000 c.c. of a ten percent solution of glucose and 50 units of insulin, and immediately operated for perforated pyloric ulcer. Two hours after the operation his pulse rate was 122, full volume and bounding in character; respirations 24 and temperature 99.8. The blood pressure now was 106 systolic and 65 diastolic. His condition continued to improve. The next morning he was given an additional 500 c.c. of glucose and 25 units of U20 insulin, and the convalescence was uneventful.

The third complication to be dealt with in emergency surgery is that of incessant vomiting with or without acidosis. Persistent vomiting may be a reflex or due to a beginning or present acidosis. In either case, glucose infusions and insulin have had a specific effect. This is true of the toxemic vomiting of pregnancy, obstructions of the pylorus, acute peritonitis, eclampsia and other similar conditions. Following glucose insulin therapy, the vomiting soon ceases, and the general condition of the patient shows a marked improvement.

In the preparation of the general routine cases, there is sufficient time to carry out all of the usual laboratory tests, but in addition to these, especially in gastric or gastro-intestinal cases, where the food intake has been restricted because of the pathology present, and in cases of marked inanition, due to malignancy or other reasons, glucose infusions and insulin, as many times as necessary before the operation, have a remarkably invigorating effect, and greatly increase the operative percentage of safety. Such patients can by this method be fed through their veins for days at a time, thereby maintaining a favorable condition until nourishment can be taken in the regular manner. We also employ this therapy in those cases whose general condition is good but who are to undergo a serious operation, and in whom some difficulty is anticipated.

METHOD

A sterile solution of C. P. glucose is used of ten to fifteen percent strength; 500 to 1000 c.c. may be given, depending upon the severity of the case to be treated. Any intravenous apparatus can be employed. A good one is that described by Thalhimer[9]. The usual precautions for any intravenous therapy are taken. The solution is allowed to flow into the veins at a very slow rate so that the entire time of administration is at least 90 minutes; the longer the better. This is very important, for dilatation of the heart is a real danger when rapid administration takes place. The amount of insulin to be given depends upon the amount of glucose given. For every two grams of glucose injected we give one unit of U20 insulin. The total amount of insulin to be given having been estimated, one-half of this amount is then injected subcutaneously when one-third of the total glucose solution has entered the veins, and the remainder of the insulin is given after the administration of the glucose has been completed. It is well for the nurse to have at hand a hypodermic syringe containing one c.c. of adrenalin as a precaution should an insulin reaction develop. Every specimen of urine passed should be examined separately, and the early ones should show the presence of glucose, thereby acting as a safety indicator on the amount of insulin given. This means that there is more glucose present in the blood stream than can be taken care of by the introduced insulin. This glucose can be made to disappear from the urine by the addition of a small amount of insulin. Where possible, frequent blood sugar determinations should be made to determine any further amount of insulin to be given. By this method, in a large number of glucose infusions and insulin, we have not had a single untoward reaction either from the insulin or the glucose.

Where the time element is an important factor, this treatment can be given during the course of the operation with just as favorable results. The method is very simple, no complicated or expensive apparatus is necessary, it can be carried out by the family physician while awaiting the consultant and the preparation of the operating room.

We do not desire to leave the impression that insulin and glucose are a panacea for all preoperative evils. It will not supplant blood transfusion in shock due to great loss of blood, but where no blood is available it is an exceedingly valuable substitute; however, in the types of cases discussed above, it has proven very effective.

CONCLUSIONS

1. Glucose infusions and insulin administered before operation in acute surgical conditions complicated by acidosis, shock, or incessant vomiting, greatly diminish the operative risk and mortality, and transform a poor surgical risk into a fair or good risk.

2. In general routine cases, particularly in gastric and gastro-intestinal conditions with or without inanition, glucose infusions and insulin have a remarkably invigorating effect, and greatly increase the operative percentage of safety.

3. Glucose and insulin are indicated in those cases that are in good pre-operative condition, but who are to undergo a serious operation, in which some difficulty is anticipated.

BIBLIOGRAPHY

1 Fisher, David, and Snell, M. W.: Insulin treatment of pre-operative and post-operative non-diabetic acidosis. J. A. M. A., LXXXII, 699, 1924.
2 Fisher, David, and Mensing, E. H.: Insulin glucose treatment of surgical shock and non-diabetic acidosis. S., G. and O., Apr., 1925, 548-555.
3 Personal communication.
4 Personal communication.
5 Cannon, W. B.: Studies in experimental shock. Arch. Surg., 4:I, Jan., 1921.
6 O'neill, F. I., Manwaring, W. H., and Moy, B. H.: Qualitative changes in hepatic glycogen during anaphylactic shock. J. A. M. A., Vol. 84, No. 15, p. 1102, Apr. 11, 1925.
7 Richter, P. F.: Insulin treatment of heptargia. Med. Klinik., 20:1381-1382, Oct. 5, 1924.
8 Brahme, L.: Effect of insulin on tissue respiration, determined by the microrespirometer. Acta Medica Scandinavica, Stockholm, 62:188, Apr. 1, 1925.
9 Thalhimer, William: A simple apparatus for accurate administrations of glucose infusions. J. A. M. A., Vol. 78, pp. 190-191, Jan. 21, 1922.

◆

CONTRIBUTIONS TO THE SURGERY OF ABDOMINAL HERNIA

BY WELLER VAN HOOK, M.D.

THE surgical attack upon the problem of hernias of the abdominal wall has thus far been local, limited and inadequate except for the simpler forms, and even in our operations for these there is a greater percentage of failures than we can conscientiously ascribe to individual operative error. I mean to insist that such beautiful and useful methods as those of Bassini, Kocher, Gerard and others for inguinal hernia are satisfactory only where there are minimal defects and distortions of the canal, and that the larger possibilities of hernial plastics have not yet been systematically considered.

For example, our favorite Bassini operation narrows the inguinal canal by sutures applied to approximate the lateral walls wholly from within. It is, therefore, logically applicable only to those cases where, with full adequacy of structures, there is a mere diastasis, not where the internal muscles are defective congenitally or as a result of trauma or pressure. A proper study of this problem necessitates our considering very briefly the bearing of anatomy, physiology and embryology. There is but one muscular mass concerned in the structure of the anterior abdominal wall. This group of muscles has its origins from the sternum, the ribs and the spine; and its attachments are at the pubes except for the very inadequate lateral association of these muscles and their aponeurotic expansions with Poupart's ligament.

As for the embryology, Bardeen has shown that the thoraco-abdominal musculature developes from above, from the ventrally directed extension of the thoracal myotomes, into the body wall. A glance at Bardeen's beautiful drawings, moreover, suffices to show how intimately the development of the thigh musculature is associated with the embryonal growth of the thoraco-abdominal musculature. So, since these muscle groups have nerve-supplies and functions that are of a common origin and distribution, they functionate harmoniously together even when their relations among themselves are somewhat changed by transplantation. Clinical advantage should be taken of these considerations. For the general laws of biology, as surgery sees them, must be observed in practice. For example, surgical operations must leave all tissues in their proper mechanical relations to one another. There must be no spaces left filled with air only, so-called dead spaces, and the tissues must be so approximated to one another that, even when healing has occurred, their functions may be resumed without further delay. For hernial plastics this means that muscles and other structures shall not be hampered by undue scar-formation; that their functions shall not be otherwise mechanically interfered with; that they shall pull in straight lines and that their nerve-, blood- and lymph-supply shall be satisfactory. The biological unities must be preserved. The advantage of a knowledge of these principles lies in the fact that the surgeon familiar with them does not need to follow rigid rules for operations, using "standardized" procedures; *he can and should plan each hernia operation to suit the requirements of the individual case before him.*

We have said that, except where the deviation from the normal is but slight, more extended operative resources are needed. We must struggle to bring into the field, if necessary, tissues taken from a distance, if we can do so without doing new damage. We must recognize that hernias that are growing in size not only give trouble by producing ever larger openings from the *cavum abdominis* into loose subcutaneous connective-tissue, but that there is a constant tendency for the intra-abdominal tissues, including the fascia pelvina *to descend by glissade,* and for the growing hernia to produce atrophy of the structures about the ring.

The writer has used and recommends for application by expert surgeons at first, not by amateurs, the following procedures:

(1) Where the patient has a "pot-belly" or, whether fat or lean, has greatly relaxed abdominal walls, the writer's *laparoplasty.** He has patients operated upon by this method four years ago who still have good abdominal walls. On each side of the abdomen, low down, a flap is raised, pedicle above, involving the outer musculature with the attendant aponeurotic tissues. The raised masses are not unlike the lower corners of the flaps of a man's unbuttoned vest. These flaps are to be sutured back again, but with maximal overlapping. This can be accomplished the easier because the raised parts are greatly enlarged as to length and breadth and because the distance between the sterno-costal border and the pubes can be lessened during wound healing by flexing the spine. The effect of this laparoplasty is striking. The lower abdomen is "tucked in" and the inguinal regions are protected. These effects should be produced pronouncedly but not excessively. This laparoplasty will be found a most useful adjuvant in the management of abdomens subject to hernias in this region.

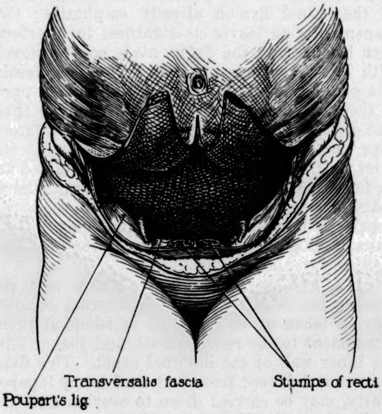


FIG. 1. Author's laparoplasty. On each side of the median line a flap is raised by making incisions parallel with Poupart's ligament and in the median line. The flap consists of parts of the aponeurosis of the external oblique muscle and its continuation, the anterior plate of the rectus sheath.

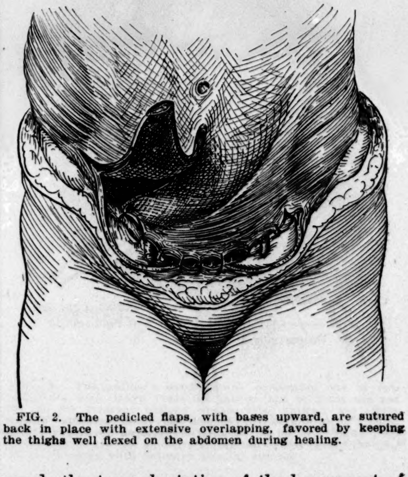


FIG. 2. The pedicled flaps, with bases upward, are sutured back in place with extensive overlapping, favored by keeping the thighs well flexed on the abdomen during healing.

(2) The writer has used and also recommends the *transplantation of the lower part of the rectus muscle* or muscles to a new attachment or to new attachments, namely to (a) Poupart's ligament or (b) to the ramus or rami of

---

*Surg., Gyn. and Obst., June, 1921.

the pubic bone or bones. A part of the rectus muscle, together with a great section of the anterior layer of its sheath, is lifted, except for its pedicle above, and shifted over to be attached to Poupart or to the pubic ramus. With the use of the spinal flexion already emphasized the transplantation leaves no tightness to interfere with healing and the defect made can be closed with lateral sutures or covered by free fascia lata grafts. The support given to the weak part of the abdomen is great; especially do we thus find a useful supporting buttress. The pubic bone can be drilled to provide supports for sutures, but, thus far, I have not been obliged to do more than stitch to the powerful connective tissue masses usually found attached to the bone. Poupart's ligament should be used only in the less serious cases because it is not strong enough to meet very heavy demands.

(3) The external oblique muscle and its aponeurosis together with the internal oblique may be taken up as a flap by incisions at their attachment to the rectus sheath and just within the inner wall of the inguinal canal. This flap, somewhat different from that used in my laparoplasty, may be carried down to overlap and immediately to fortify the canal, especially at its lower extremity, which is often weak. This flap when carried down is also rotated a little.

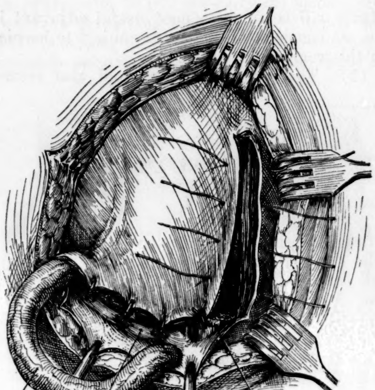


FIG. 3. A flap of the aponeurosis of the external oblique and its continuation as the anterior plate of the rectus sheath is sutured to Poupart's ligament.

(4) The writer has used, and recommends in suitable cases, the application of *powerful sutures* of chromicized catgut or of connective-tissue taken from the patient's own body *to grasp or even to surround weak parts* of the abdominal wall. The typical example of this method is that of surrounding the inguinal canal with deeply placed sutures.

By running the gloved finger along Poupart's ligament when the inguinal canal is opened that band may be readily outlined and sutures may be carried around it, and on the inner side may be passed around a great part of the costo-sterno-pubic musculature. Such sutures give a far greater security than small sutures placed from within the canal.

The problem of the management of the spermatic cord has troubled surgeons for centuries; castration was a mediaeval practice. One may depress the cord, letting it pass over the pubic bone at the outlet of the canal; or one may lift it and suture Poupart to the internal pillar, as Bassini taught. Woelffler was not generally followed in his heroic freeing of the testis and cord and his carrying them around the rectus muscle to be dropped into the scrotum through an incision in the rectus sheath. Probably experience will show that simple depression of the cord will at once conserve the delicate structures within the cord and permit of adequate closure of the canal. Certainly this manoeuver gives good opportunity to pass sutures around the whole of Poupart's ligament and very deeply into the inner musculature.

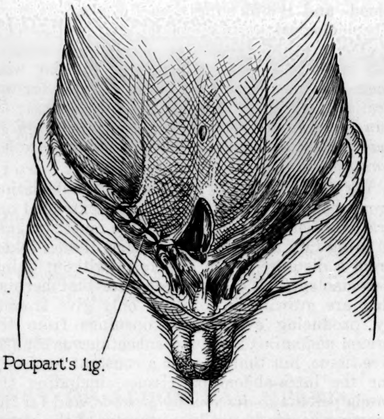


FIG. 4. The flap sutured *over* the cord. The defect in the median line can be closed directly or by a slight plastic. In extreme cases a free graft from the fascia lata is used.

(5) Fascial sutures are of the utmost importance in the surgery of the abdominal wall. MacArthur deserves especial credit for suggesting their use in hernias, deriving his material from the aponeurosis of the external oblique. The pedicles which he leaves seem to me useless because they cannot adequately bear nerves and blood- and lymph-vessels. Gallie and Le Me-

surier add nothing of fundamental character in their use of sutures of fascia lata instead of aponeurosis; but their enthusiastic reports are encouraging and their technical suggestions are useful.

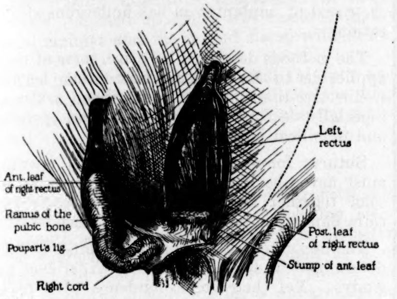


FIG. 5. A flap, like that used in Fig. 3, is sutured to the connective tissue upon the ramus of the pubic bone, a much more secure, but slightly more difficult procedure. The cord may be brought through the median opening.

Going a step farther I have *used and recommend powerful free ribbon grafts* of fascia lata, of aponeurosis or, when available, bands cut from the hernia sac. These bands from the fascia lata should be from a quarter to three-quarters of an inch wide and from three to six or more inches long—eight inches makes a useful length. The external oblique aponeurosis yields usually one good graft without interference with its closure. These great transplants applied about the inguinal canal and the neighboring musculature are most useful because they are strong, aseptic and "biologically suited" to their new environment.

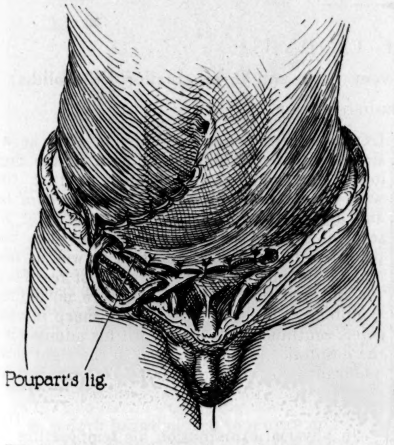


FIG. 6. The writer's laparoplasty may be combined with the closure of hernias.

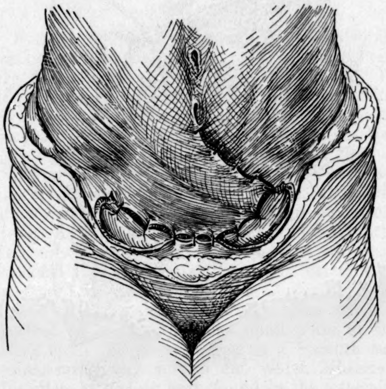


FIG. 7. In the female the anatomical relations are simpler.

The idea that such grafts "remain forever" almost unchanged cannot be accepted. It is far more likely that these grafts are substituted in later years by new connective tissue. But, even so, their usefulness is very much greater than that of such suture material as catgut. For they

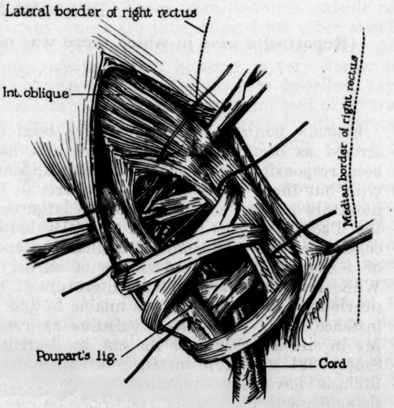


FIG. 8. The author's band suture, preferably one to two centimeters wide, taken from the fascia lata or from the cut edge of the external oblique aponeurosis, entirely surrounds Poupart's ligament and very deeply pierces the rectus muscle body. Interrupted sutures are as good or better. These deep sutures, which are not shown piercing the rectus deeply enough, may be combined with ordinary Bassini sutures.

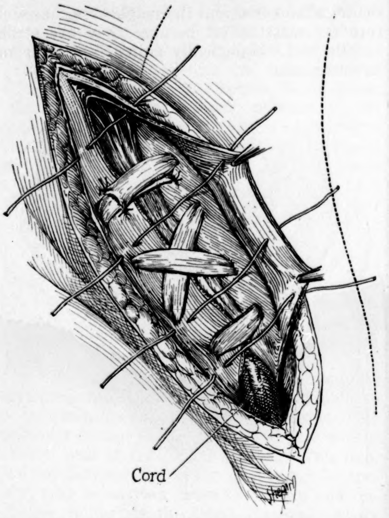


FIG. 9. The lacing band sutures (or the simple interrupted band sutures) are locked with fine silk or catgut sutures. The band sutures, which have brought Poupart's ligament, with the shelving edge of the external oblique aponeurosis, into intimate relationship with the rectus body, are shown about to be buried under the inner edge of the external oblique aponeurosis.

are used while chemically unchanged and while still possessed of some of the characteristics of living tissue that make them resistant to infection to an unusual degree. Many surgeons report the continued life of such grafts even if their seat of implantation has undergone suppuration.

The methods described here are, some of them, applicable to the treatment of other hernias. Connective-tissue, free ribbon or band grafts are especially useful in the repair of post-operative and umbilical hernias.

Sutures for the closure of hernial openings must never be left tense; if the tissues do not come together freely pedicled musculo-aponeurotic flaps (partial laparoplasty) must be used.

The usefulness of these methods must be fully determined in detail by years of experience and study. Yet their correspondence with reason and with established surgical principles and practice makes them available immediately to the thinking surgeon. I have successfully practiced all these methods, as suggested, in suitable cases.

These different procedures are not to be applied according to rigid rules, but should be made use of separately or in combinations, according to the surgeon's judgment, to meet the requirements of individual cases.

APPENDICEAL LITHIASIS*

(Report of a case in which there was one very large and three smaller Enteroliths)

BY VINCENT VERMOOTEN, M.D.

INTRODUCTION

FOREIGN bodies of all kinds have been described as occurring in appendices and have been responsible for attacks of acute appendicitis, but there are so very few reports in the literature of true calculi, especially large ones, that Packard[1] reporting a case in 1921 titled his communication "Appendiceal Lithiasis—Report of a case, unique in the annals of surgery." While reviewing carefully the literature of the previous twenty years he was unable to find an instance of an appendiceal calculus approaching in size and hardness the one he described. Since 1921 very few instances of appendiceal lithiasis have been reported so that it was thought worth while to place this case on record.

CASE REPORT

The patient, J. M., a white machinist, age 41, entered the New Haven Hospital on January 14, 1925, complaining of pain in the right lower quadrant. The family and personal histories were irrelevant. He dated his present illness from a week previous to admission when he was siezed with acute abdominal pain in the right lower quadrant, not associated at that time with nausea or vomiting. He remained in bed and applied first hot, then cold, and later linseed oil compresses to his abdomen. The pain persisted, he developed anorexia as well as some nausea but no vomiting. He did not feel feverish and had no chills. There were no urinary symptoms. The pain, which was sharp in character, continued unabated until his admission to the hospital. It was localized in the right lower quadrant and did not radiate. He had had one similar attack for three days, three months previously.

On physical examination his temperature per rectum was 100 degrees Fahrenheit; his pulse rate was 100 per minute; W. B. C. count 16,000. The abdomen was not distended; the respiratory movements were not limited. On palpation the left side was soft, while the entire right side was slightly rigid, but there was no tenderness on palpation in the right upper quadrant. In the right lower quadrant the muscular rigidity was more marked and there was definite tenderness and muscle spasm on pressure particularly over McBurney's point. No masses were felt.

---

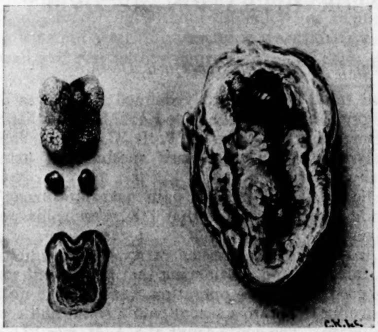
*From the Department of Surgery, Yale University, School of Medicine, and the Surgical Clinic of the New Haven Hospital.

Operation: A McBurney incision was made, the peritoneum incised and the cecum delivered after freeing numerous adhesions. A large, acutely inflamed appendix was removed in the usual manner and the wound closed with drainage.

The patient had an uneventful recovery and was discharged from the hospital with the diagnosis of acute appendicitis with abscess, retrocecal.

PATHOLOGIC NOTE

Gross Description: The specimen consisted of a very large swollen appendix measuring 7 cm. in length and 3½ cm. in its greatest diameter. The surface was covered with small clots of fibrin. On section the lumen was patent, the mucosa of the distal two-thirds apparently intact, while that of the proximal third appeared necrotic. Within this portion of the appendix there were four calculi, all having a dark, brownish red color. The two smaller ones, each of which measured about 2x3 mm. in size, had smooth, faceted surfaces; the next larger measured 1 cm. in average diameter and was roughly spherical in shape, while the largest calculus measured 2x1.5x1 cm. The surface was irregularly nodular. On drying the color changed from a dark brownish red to a gray and in some places to a chalky white. All the calculi were extremely hard and could not be cut with a knife. On sawing through the largest calculus one found it to contain a soft, friable, grayish colored central portion covered by a darker, very hard, brittle shell, 2-3 mm. in thickness. The shell seemed to have been deposited in separate layers as one could see the concentric arrangement. The chemical analysis of these calculi was carried out under Professor Smith's direction in the Department of Physiological Chemistry, who reported that the calculi were composed largely of calcium phosphate but contained small quantities of cholesterol, some silica, and a trace of bile pigment.



The figure shows the appendix with one of the concretions in situ. The other three concretions are drawn alongside and beneath these is a cross section of the largest one, showing the soft, friable centre and the outer calcerous shell.

DISCUSSION

Foreign bodies of all kinds, especially pins, lead shot, fish bones, hair, teeth and parasites, are not infrequently found in appendices. In 1911, Ridwell[2] reported a varied collection of his own and says: "That although having kept no accurate statistics it is my impression that foreign bodies have been found in at least 20% of the appendices I have removed." Discussing the frequency with which appendiceal calculi are found, Murphy[3] says that they are but rarely reported and Kelly[4] claims that true enteroliths are only found in a small percent of cases. Packard's[1] is apparently the largest calculus. It measured 4 cm. in length, 1 cm. in thickness and at one end the width was 2 cm., from which it tapered to a comparatively small point at the other end. The next largest is a bismuth calculus, measuring 4.5x1.5 cm. which Mülleder[5] describes as having been found in the appendix of a patient who had had a bismuth meal two years previously. Rigollot-Simonnot and Saissi[6] also reported a very large calculus which measured 3x1.8 cm. A careful review of the literature has not revealed any other calculi which are larger than the one here reported, Downes'[7] calculus which was as large as a filbert being the next in size. There were, however, calculi reported which are interesting from other standpoints. Navarro[8] reports one having a very peculiar shape, which, however, is very similar to gross appearance to the one here described, having a hard shell, which was composed of several layers of silica cemented together with vegetable matter, and a soft friable core, evidently composed of fecal material.

The calculus here reported was composed largely of calcium phosphate and contained but a small amount of silica, some cholesterol and a trace of bile salts together with a fair amount of vegetable matter. This agrees much more closely with the analysis done by Maver and Wells[10], who found the inorganic material to be largely calcium phosphate. There was also present in their concretions some koprosterol and a little cholesterol. Packard[1] in describing his specimen says both concretions are found to consist of inspissated fecal material and an amorphous crystal deposit of bile salts in an irregularly concentric arrangement. He, however, does not give any definite chemical analysis.

This then would appear to be a true enterolith which was probably formed in situ as described by Kelly[4] in his monograph on the appendix, where, discussing appendiceal concretions, he says: "They are ovoid or spherical and have a more or less smooth polished surface; the color is dark brown, but it is common to find the dark brown surface covered by a grayish white deposit of lime salts; the interior is lighter in color and more friable, usually a nucleus consisting of a fragment of foreign material, and, surrounding this, concentric layers of a substance largely composed of lime salts; mucus becomes desiccated and the lime salts deposited secondarily."

With the more popular use of the X-ray, appendiceal lithiasis is becoming more generally recognized and not infrequently has to be differentiated from ureteral calculi, as in Blanchard's case (see Murphy) and several other instances mentioned by Murphy, as well as in the remarkable case reported by Mark[11], in which it was not possible to make a differential diagnosis even with the help of pyelo- and ureterograms.

SUMMARY

A case of appendiceal lithiasis is reported in which there was one large calculus measuring 2x1.5x1 cm. and several smaller ones. The calculi all contained a soft friable central portion and a hard calcareous shell. The chemical analysis of the calculi is given as well as a review of the literature on the subject.

In conclusion I wish to thank Dr. Samuel C. Harvey for the privilege of reporting this case.

BIBLIOGRAPHY

1 Packard, H.: Boston Med. and Surg. Jour., 1921, CLXXV, 656.
2 Ridwell. L. A.: London Lancet, 1911, II, 944.
3 Murphy, J. T.: Am. Jour. Roentgen., 1922, IX, 437.
4 Kelly, H. A., and Hurdon, E.: W. B. Saunders Co., Phila., 1905.
5 Mülleder, A.: Zentralbl. f. Chir., 1923, L, 384.
6 Rigollot-Simonnot and Saissi: Paris Chirurg., 1913, V, 1085, quoted from Murphy.
7 Downes, W. A.: Ann. of Surg., 1917, LXVI, 506.
8 Navarro, A.: An. de la Fac. de Med. Montevideo, 1922, VII, 307. Abstract. Jour. Am. Med. Assn., 1923, LXXX, 214.
9 Falkenstein, I.: Zentralbl. f. Chir., 1923, L, 1821.
10 Maver, M. E., and Wells, H. G.: Arch. of Surg., 1921, III, 439.
11 Mark, E. S.: Jour. Am. Med. Assn., 1924, LXXXIV, 1689.

ACUTE APPENDICITIS DURING LABOR OPERATION—RECOVERY

BY D. N. BARBER, M.D., AND J. R. MILLER, M.D., F.A.C.S.

From the Obstetrical Service of the Hartford Hospital, Hartford, Conn.

ACUTE appendicitis during labor is such a rare occurrence that we feel obliged to report the following case. E. Y. No. 166399 was admitted on December 14, 1924, to the Hartford Hospital at 8:45 P. M. She was a white primipara at full term having indefinite pains, unruptured membranes. She gave the history of having her first pain in the right lower quadrant at 3 P. M. on the afternoon of admission, which grew quite severe and was steady in character, the patient being most comfortable when the right thigh was flexed. Soon afterwards labor pains started at five minute intervals which did not last more than an hour. About 5 P. M. there was a second sharp attack of pain which remained constant and severe until admission.

On admission the temperature was 98.4, pulse 104, respirations 24. General physical examination was negative except for the abdominal findings. Pelvic measurements were 23-27-32-21. B. P. 138/80, urine, acid 1010, very slight trace of albumin, no sugar, normal sediment. Abdomen showed full term pregnancy, position of the child was not discernible because of abdominal tenderness. She localized an acute steady pain in RLQ about 1" above Poupart's ligament and about 2" inside of and on the level with the anterior superior spine. This pain was quite distinct in character from the occasional and irregular uterine contractions. Rigidity of the muscles could not be made out because of the enlargement of the uterus. Fetal heart sounds were heard just to the left and below the umbilicus, no vaginal examination was done but rectal examination showed the cervix not taken up nor dilated, presenting part was high in the pelvis and could not be clearly defined; there was no vaginal show. White blood count a few hours after admission showed W. B. C. 19,000, 95% polynuclears. Catheterized specimen of urine was negative.

Soon after admission pain near McBurney's point became so severe that 1/6 gr. morphia was given.

In view of the extreme rarity of appendicitis at full term and considering that the patient was in good condition, operation was delayed until morning to obtain a second white count and consultation. The white count at 8 A. M. was 12,600 with 92% polynuclears, temperature, pulse and respiration as on admission. Labor pains persisted at irregular intervals and abdominal tenderness in RLQ continued severe. On consultation with Drs. T. Weston Chester and H. Gildersleeve Jarvis a tentative diagnosis of acute appendicitis was made and patient was taken to the operation room. Appendectomy was done at 9:30 A. M. through a right rectus incision, under gas-oxygen-ether anaesthesia. Upon opening the abdomen several ounces of turbid fluid with numerous fibrine flakes were found. A culture taken was later found to be sterile. The cecum lay against the right side of the pregnant uterus and the appendix was found adherent at its tip to the round ligament near the right inguinal canal. On freeing the appendix its tip was seen to be covered with yellow exudate. A routine appendectomy was done without difficulty, inverting the stump, the right tube and ovary were seen to be normal lying much posterior and were disturbed as little as possible. The omentum which was very well developed was carefully placed between the cecum and uterine wall and the abdomen was closed without drainage by a figure 8 silk worm gut suture and interupted silk worm gut for the skin, peritoneum being closed by continuous No. 2 plain cat gut.

Following operation an endeavor was made to postpone active labor and patient was given pantopon sub-cutaneously, totalling 8 ampoules in 17 hours. The opiate did not have any influence upon the progress of labor except to give the patient a very comfortable first stage. The highest post-operative temperature being during labor 100.2, pulse 140 just before delivery. 18 hours post-operative meconium was observed at the vulva, vaginal examination showed the cervix to be fully dilated with frank breech presenting. Under ether anaesthesia baby was extracted without difficulty. The second degree perineal laceration was immediately repaired and postpartum hemorrhage was apparently avoided by giving one ampoule of pituitrin during the period of extraction. The baby weighed 9 lbs. 1¼ oz., breathing without difficulty but requiring constant watching during the next 24 hours because of respiratory depression which evidently was caused by the large amount of opium administered.

The patient made an uneventful recovery having moderate gas pains. Small doses of ergot were given during the puerperium, sutures were removed on the 10th and 11th days, postoperative, wound healed by primary intention. Patient was out of bed on the 11th day and discharged on the 15th. The perineum was well healed, uterus well involuted in mid position, no masses nor tenderness in either fornix, cervix small, hard, freely movable, no lacerations felt. No cystocele or rectocele. Pathological report at first showed a normal appendix, sections were cut nearer the tip of the appendix which showed a moderate dilitation of the peripheral blood vessels and beginning accumulation of leukocytes near the peritoneal surface.

DISCUSSION

This case is one of mild but definite acute appendicitis occurring at the onset of labor in which a routine appendectomy followed by breech extraction under ether gave very satisfactory results. The dosage of pantopon was undoubtedly too large but fortunately did not cause any serious trouble.

◆

THE RELATION OF CLEAN MILK TO PROGRESS IN INFANT FEEDING*

BY JOHN LOVETT MORSE, M.D.

Clean milk and progress in infant feeding are so intimately related that it is very difficult to separate them. Progress in infant feeding would have been impossible, unless there had been a coincident improvement in the milk supply. It is very doubtful, on the other hand, whether there would have been any improvement in the milk supply, if there had been no effort to improve infant feeding. It may be that others knew of and appreciated the intimate relation between clean milk and better infant feeding. The late Dr. T. M. Rotch was, however, the first and, for a time, at least, the only one who took any active steps to get a good milk for babies and at the same time to put infant feeding on a rational basis. His efforts were for a long time misunderstood, unappreciated and ridiculed. They finally, however, obtained the recognition which they deserved and were generally adopted. Through his efforts, and with the aid of Mr. Walker, the Walker-Gordon farm for the production of clean milk and the Walker-Gordon Laboratory for the preparation of modified milk for babies were established in Boston in 1891. They both met with considerable opposition, largely because physicians and, to a less extent, the public were unable to see the woods because of the trees. Unfortunately, there are a considerable number of young physicians in Boston and elsewhere at the present time who have the same trouble with their vision.

Physicians elsewhere also appreciated the need and value of clean milk for babies and children and, in consequence, a Medical Milk Commission was established in New Jersey in 1892 and the Association of American Milk Commissions in 1905. The first Medical Milk Commission in Massachusetts was established by the Suffolk District Medical Society in 1906, fifteen years after Dr. Rotch had pointed out the way, at the suggestion of the late Dr. Charles Harrington, at that time Commissioner of Public Health.

Only the older men here know what the milk supply was like in the early nineties and previously. They only can appreciate how great the improvement in it has been. The younger men can have no conception of it and, hence, cannot be blamed too much for not realizing what has been done for them and how much easier infant feeding has been made for them as the result of this improvement. If they did, they would not be so ready to place obstacles in the way or so sure that their success in feeding babies is due to the method which they use instead of to clean milk. Milk used to be poured out of cans into household containers at the doors. No attention whatever was paid to even the first principles of cleanliness at the farms or after the milk was drawn. No one saw any reason for keeping it cool, except that if it got sour people would not buy it because it did not taste good. Milk at the stores was sold out of a "dip tank," which was seldom, if ever, cleaned. This was the case long after the propaganda for clean milk began. It was impossible for poor people to get a clean milk for their babies for a long time after the Walker-Gordon Laboratory was established. The conditions which prevailed were well expressed by a sign which used to be in the window of a store on Blossom Street—"Skum milk for sale." At this time I cannot refrain from paying tribute to Mrs. Charles Whiting, who saw the need and took steps to meet it. A committee was formed at her request in 1905 and milk stations were established where the poor could get a reasonably clean milk at a moderate price. How much this cost the Whitings they alone know. Only the poor know how much good it did them. These stations were the beginning of the Milk and Baby Hygiene Association, which has since been absorbed by the Community Health Association. Whether the good which this charity does now is relatively as great as it was then I leave to you to judge.

---

*Read at the invitation meeting at the Walker-Gordon Laboratory, June 25, 1925.

It was almost as difficult for the rich to get a good milk supply as it was for the poor, or, rather, they did not see the importance of it as much as the poor. There was for example, no decent milk supply on the North Shore before the Cherry Hill farm was established. Let me illustrate conditions as they were at that time by my notes on a five-weeks-old baby belonging to one of the richest and best known families in Boston seen at Topsfield in June, 1906.

"The barn was inspected this afternoon and it was found that both the cows were being kept in a hired barn, which was very small, extremely dirty and next to the privy. The windows were kept shut at night. The milk was pale and filthy and the cans smelled like old cheese."

Let me approach the subject from another point of view. The infant mortality in Boston in 1900 was about one hundred and twenty-five per one thousand live births, and in Massachusetts one hundred and seventy-seven. It is now in Boston a little over eighty, a diminution of a little more than forty, or about thirty-three per cent. It used to be stated that about twenty-five per cent of deaths during infancy were due to acute gastrointestinal diseases and fifteen per cent to diseases of nutrition. Twenty-five per cent of one hundred and twenty-five is thirty-one and fifteen per cent is eighteen. The elimination of the diseases of nutrition and of the acute diseases of the gastrointestinal tract would, therefore, be more than sufficient to account for the diminution in the infant mortality. I have not the figures at hand to prove that the diminution in the infant mortality is very largely due to the diminution in the deaths from diseases of nutrition and the acute diseases of the digestive tract, but a brief comparison of conditions as they used to be and as they are now is sufficient to show that it is. In the nineties the wards of the Infants' Hospital were filled in the winter with skeletons. There were so many of them that there was very little room for babies ill with acute diseases. The wards had to be closed in the summer, because the mortality from the acute gastrointestinal dseases was so terrible. Now an emaciated baby is a great exception in the winter at the Infants' Hospital and the class of cases in the wards in the summer is almost the same as in the winter, except that respiratory infections are less numerous. When I first had charge of the wards at the Floating Hospital almost every bed was filled with a baby with some sort of acute diarrhea. They were so much alike that it was impossible to tell the babies apart, either from looking at them or from their histories. There was scarcely a baby on the boat that was suffering from any other sort of illness. The conditions among the day patients were the same. Now the babies are sick with all sorts of diseases and the acute diseases of the digestive tract are relatively unimportant. There are only two or three cases of infectious diarrhea, for example, in a season in comparison with one or two hundred in a summer in the past. It is needless to say that the mortality has diminished tremendously.

The improvement in the methods of infant feeding since the early nineties has been as great as that in the milk supply. Hit or miss methods have gradually been replaced by rational procedures based on scientific knowledge. Proprietory foods have been more and more replaced by milk mixtures and the proprietory foods which used to be given mixed with water are now given mixed with milk. Milk now forms the basis of all foods for infants. It is true that no respectable cow would recognize many of the concoctions which are manufactured from it nowadays, but, nevertheless, the basis of them all is milk. Methods are continually changing, however, sometimes for the better and sometimes, it seems to some of us, for the worse. Nevertheless, whether the composition of the food is calculated in percentages or in grams of the different food elements or in ounces per pound of weight, whether it is given raw or boiled, acidified or alkalinized, at long or short intervals, milk is the basis and those who prescribe the food have, or think they have, a good reason for what they do.

In spite of all these changes in methods of infant feeding in recent years, which may or may not indicate progress, according to the point of view, the diminution in the frequency of the acute diseases of the gastrointestinal tract and in the infant mortality continues. It seems evident, therefore, that this diminution must be due more to the improvement in the milk supply than to improvement in methods of infant feeding. It is probable that there would have been a diminution in the incidence of the acute gastrointestinal diseases with improved methods of feeding, even if there had been no improvement in the milk supply. It is certain that there would have been a marked diminution in their incidence with the improvement in the milk supply, even if there had been no improvement in methods of feeding. The diminution in the frequency of severe disturbances of nutrition is probably due more to the improvement in methods of infant feeding than to that in the milk supply, although it is difficult to prove it. A point in favor of its being due to improvement in methods of feeding is that, while, on account of the diminution in the infant mortality because of clean milk, there are more babies to have chronic disturbances of nutrition, fewer of them do.

This is perhaps not the place to speak of the relation between certified milk and the general improvement in the milk supply. It seems to me, however, that the improvement in the general milk supply is due very largely to the standards set up for certified milk by the American Association of Milk Commissions and by the Walker-Gordon Laboratory for its product. The standards of the Walker-Gordon Laboratory have for years been as high as those of the Association of Milk Commissions, although in the past the Walker-Gordon farms have not been certified. I am sure that we are all glad that they are now certified and that we all feel that it is of great advantage to the campaign for clean milk to have all the agencies which produce clean milk working together.

BLOOD TRANSFUSION*

BY EDWARD A. HERR, A.B., M.D.

Attending Gynecologist, St. Mary's Hospital

In the field of surgery, it is difficult to select a more interesting or fascinating chapter than has been experienced in the course of the development of blood transfusion. Its path has been beset with countless obstacles and trials, at times apparently insurmountable, and with periods of success and disappointment. Considering in detail, the work of the pioneers, Murphy, Shattock, Landsteiner, Jansky, Moss, Crile, Carrel, Dorrance, Janway, and the later workers, Percy, Vincent, Kimpton, Horsely, Lindemann, Agote, Lewisohn and Unger, one is forced to realize the persistent fortitude required in attaining the modern successes in this field of surgery.

METHODS

Methods of transfusion are classified into: (A) Modified, and (B) Unmodified; the latter into: (1) Direct, and (2) Indirect.

Of the modified method the one as used by Lewisohn is most generally accepted. In his technic a very simple apparatus is necessary, which commends it for use by any general practitioner of average skill. Its advantages are simple technic, ease of execution and the ability of transporting blood from a donor to a recipient at a distance. Its disadvantages consist of, clotting of blood in the needles or canulas, the difficulty of obtaining uniform mixture, the frequent formation of clots in gravity apparatus, the necessity of filtering mxture to avoid clots, the danger of contamination by exposure to the air, and, most important, the destruction by the citrate solution of the blood platelets which are necessary for maintaining the blood at its highest efficiency. Many of these difficulties can be overcome by the use of the Hoffman and Habein[1] or the Brines[2] closed method apparatus.

The action of sodium citrate on the blood has been demonstrated in several ways[3]. 1. It destroys the blood platelets whose function is necessary for coagulation. This method would therefore not be indicated to control hemorrhage. 2. Sodium citrate added to whole blood in amounts necessary to prevent coagulation alters the red cells in such a way as to give off anticomplementary properties into the plasma.

It furthermore destroys complement directly and reduces the phagocytic and opsonic powers of the blood. It would therefore not be used in general infections where a resisting power is sought. 3. Sodium citrate increases the friability of the erythrocytes, which is not favorable in the anemias.

Of the unmodified blood the only direct method is the artery to vein or vein to vein anastomosis[5] and on this method we need not comment here. Of the unmodified indirect methods, three are in use at the present time: 1, the Lindemann; 2, Kimpton-Brown tubes, and 3, the Unger, which we will take up in the order named.

In the Lindemann syringe method three to five 20 cc. syringes are used. Blood is drawn by syringe-needle method from donor and the syringe passed to assistant, who injects the blood into the recipient's vein. A nurse rinses the syringes in the three consecutive basins of saline solution; the last should remain clear of blood. The syringes are passed to the operator in rotation. The disadvantages of this method are clotting in the needles, loss of time in changing syringes and the number of assistants required.

The paraffin tube method of Kimpton-Brown requires an incision in the vein for insertion of a glass nipple in the tube which is filled by "vis-a-tergo" in the vein. The tube filled with blood is now transferred to the recipient and transfused through the incision in the vein. Its chief advantage is that here whole undiluted blood is used, but it has the disadvantages of incising the vessels and requiring considerable skill to line the tubes with paraffin in order to prevent coagulation. It is, however, a true whole blood transfusion and an excellent method.

---

*Presented before the annual meeting of the Connecticut State Medical Association, Bridgeport, Conn., May 20, 1925.

In the Unger unmodified, indirect method, the apparatus consists of a four-way swivel, a Record and a Luer syringe, two Unger needles and some small caliber rubber tubing. With the swivel turned toward the donor the Record syringe is drawn full of blood. The swivel is now turned toward the recipient and blood injected into the recipient. The assistant with the Luer syringe constantly injects saline solution in the opposite direction, thereby keeping the tubing clean and free. Ether is constantly sprayed on the Record syringe to prevent clotting and over-heating of blood.

This method possesses the advantages of using whole blood, it is speedy, blood does not come in contact with the air and a small corps is required. It can be performed at the bedside and the vessels are not injured. The latter advantage is important if more than one transfusion is to be performed on the recipient. It furthermore does not destroy the platelets and it permanently shortens the coagulation time, which is an all-important factor in the control of hemorrhage.

Auto-transfusion or the replacing of free blood in the peritoneal cavity following abdominal hemorrhage is merely increasing the load of the already over-taxed absorption powers of the peritoneum. The life of the red cell, once removed from the blood stream, ceases. Furthermore if, as is necessary, we filter the blood, we remove thereby most of the erythrocytes, and it is doubtful if the remaining red cells are ever absorbed through the peritoneum as useful cells. A better method is to remove all clots and thereby put the peritoneum at rest, and if necessary give a whole blood transfusion.

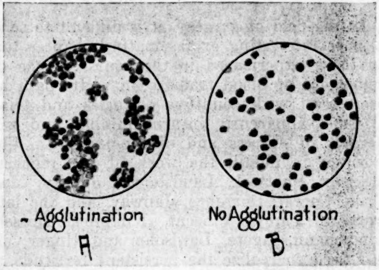
Transfusion by the intergluteal method[7] of defibrinated or non-defibrinated blood by giving repeated injections of 15 to 20 cc. has been used. It is doubtful if sufficient blood is given by this method to be of great service to the patient.

Intra-peritoneal transfusion of whole blood by the syringe method in infants has been advocated by some. Experiments on healthy animals have shown that the blood[8] was absorbed through the peritoneum. On the other hand autopsies performed on the bodies of three infants three days after intra-peritoneal transfusion had been done showed the blood in an unchanged state.

Transfusion in infants[9] is most readily performed by the superior longitudinal sinus: The child is wrapped in a blanket, the head need not be shaved. Either the anterior or posterior angle of the anterior fontanelle is palpated with the index finger and a short, large caliber needle inserted until the same feeling is experienced as is met with in penetrating the dura in a spinal puncture; 50 to 150 cc. of blood are transfused.

BLOOD GROUPING

As a routine, a Wassermann test should be done excepting in urgent cases, but in all cases the blood grouping must be performed. Of the two methods, the Jansky and the Moss[10], the latter is most commonly used in this country. This is based on the existence in the blood of iso-hemagglutinins, of which there are two, A and B, and the corresponding receptors, a and b, in the red cells. This provides for four possibilities or groups, the presence of A, or B, or A and B, or neither A nor B amboceptors in the serum and the presence or absence of the corresponding receptors, a or b, in the red cells. From the Moss grouping it will be seen that Group IV is the universal donor and Group I is the universal recipient. When possible a similar group as the recipient is selected, but a Group IV donor may always be used[11]. Grouping is further checked by matching the donor's and recipient's corpuscles and serum[12].



Showing two microscopic fields: A, agglutination or incompatibility of two specimens of blood; B, non-agglutination of compatible specimens.

When the plasma of the recipient is highly haemolytic for the donor's corpuscles immediate shock may occur. On the other hand, if the donor's serum agglutinated the recipient's corpuscles a chill may occur, but it is not sufficient to contra-indicate using the donor where a perfect mating of the blood is not obtainable. We have frequently used this type of donor with beneficial results to the recipient.

The technic of blood grouping is based on the phenomenon that iso-hemagglutination occurs independently of hemolysis and that hemolysis with few exceptions precedes or accompanies agglutination.

The active life of the red cells is from seven to thirty days[13] and is susceptible to chemical agents and changes in the salt content of the plasma. Hemolysis is the robbing of the hemoglobin content of the red cell, with active blood destruction and the release of toxic products. It affects one of the three component parts of the cell[14].

Iso-hemagglutination or clumping is dependent on both the cells and the serum. It affects the cell as an entity, in contrast to hemolysis, which affects some of the components of the cell. Iso-agglutinins appear in 97% of adults. Iso-hemolysins occur in only 25%.

In our hands the Microsedimentation test (Linzenmeier) has brought forth some interesting factors preparatory to blood grouping. In every case showing a wide variation in the reading of the sedimentation test between the donor and the recipient iso-agglutination to a greater or lesser degree occurred, usually in proportion to the variation in the reading of the two bloods tested. In most cases this has held true despite the fact that the recipient and the prospective donor were of the same group. In one of our cases of septicemia following abortion the sedimentation reading was 85 millimeters in 17 minutes, which was an instance of marked acceleration in the blood settling properties. A long list of Group IV donors showed normal sedimentation reading. In every case of typing of the normal Group IV donor with the septicemia case with accelerated sedimentation reading, agglutination occurred.

From our results and studies[15] with the Microsedimentation test we are led to conclude that in severe anemias and septicemias a marked settling exists, indicating a loss in the red-cell tension in the recipient. This is conductive to iso-agglutination with a donor of normal sedimentation reading.

We have also noted in those cases in which the Phloridzin test has been positive due to retention of the placenta following abortion that iso-agglutination of the recipient's serum with the prospective donor's corpuscles frequently occurs. From this we infer that variations in the sugar content in the blood are conductive to iso-agglutination on the part of the plasma of the recipient.

REACTIONS

In the citrate method reactions are more frequent, due to the chilling of the blood during transfusion[5] and to the destruction of the blood platelets "in vitro"[8]. In all methods laboratory errors in typing and the employment of donors with imperfect iso-agglutination tests are responsible for chills of a major or minor character, depending upon the degree of error or of variation of the test. Chills may also be aticipated in those recipients who, prior to the transfusion, have received injections of anti-toxins, vaccins, bacterins, serums or coagulants in the treatments of diphtheria, tetanus, septicemia, toxemias, or haemorrhage. Certain articles of diet may also have a detrimental influence. Ether anaesthesia may be a factor, but in our experience does not contraindicate transfusion for post-operative shock.

INDICATIONS

The field of indications for transfusion is continually broadening. In haemorrhage from fibroids, abortion, post-partum, post-operative and from ruptured tubal pregnancies, duodenal, gastric or typhoid ulcers and pulmonary origin it is a decisive factor. With a hemoglobin of 20% transfusion is imperative. When the hemoglobin remains between 20% and 30% for any length of time transfusion is indicated. A hemoglobin of 40% is sufficient to carry on oxidation in a patient at rest in bed[16].

In preparing a patient for a serious operation transfusion will transform an otherwise hazardous risk into a safe procedure. In surgical shock, whether post-operative or of traumatic origin, it is a valuable weapon of defence. Here the lowered blood pressure is the indication and the amount to be transfused is the amount required to raise the blood-pressure to normal. In gas poisoning and in anuria "repeated venesection"[17] has been successful. In puerperal infection[22] whole blood transfusions diluted with Ringer's solution is the treatment of choice. In severe septicemia without loss of blood simple transfusion is of less value[18] because normal blood possesses fewer protective anti-bodies than infected blood. Here immunization with 1000 millions of stock bacterin or with an autogenous vaccine has given satisfactory results. To arrest hemorrhage[19] transfusion will succeed when all other coagulants have failed, and it is the method "par excellence." To raise the blood count 1,000,000 red cells it is necessary to transfuse 15 cm. of blood for every kilogram of body weight of the recipient[20].

From the medical standpoint it has proved of value in malnutrition of infancy[21] and pernicious anemia of adolescence, and has frequently saved otherwise hopeless cases of nephritis, typhoid and pneumonia. In carcinoma from any cause it is of assistance in the prolongation of life and is a valuable adjunct in cases where surgery or radiation is indicated. It is useful in all cases of haemophilla and haemorrhagic diathesis and anemia of pulmonary tuberculosis.

CONCLUSIONS

From our experience with transfusion we have concluded:

1. Whole blood should be used.
2. The Unger method is the method of choice.
3. Further work with the Microsedimentation test may help to explain the occurrence of

the para-groups not accounted for by the Moss method of grouping.

4. That properly used transfusion will reclaim many otherwise inoperable risks and in general reduces the mortality in both the surgical and medical field.

BIBLIOGRAPHY

1 Hoffman and Habein: Transfusion of Citrated Blood. J. A. M. A., 76, Feb. 5, 1921.
2 Brines, C. A.: The Transfusion of Unmodified Blood. 313, Arch. of Surg., Sept., 1923.
3 Unger, L. J.: Precautions Necessary in Selection of Donor for Transfusion. J. A. M. A., 76:9, Jan. 1, 1921.
5 Lewisohn, R.: Citrate Method of Blood Transfusion After Ten Years. Boston Med. and Surg. Jour., 33, CXC, 1924.
6 Moon, E.: Observations in a Case of Auto-transfusion (Beobachtungen bei einem Fall von Auto-transfusion). Vlaamsche geneesk. Tijdschr., 189, IV, 1923.
7 Koeler, E.: Intergluteal Injections of Non-defibrinated Blood for Secondary Anemia. Muenchen Med. Eschnschr., 1916, LXII, N. 48.
8 Siperstein, D. M., and Sansby, J. M.: Intra-peritoneal Transfusion with Citrated Blood; An Experimental Study. Am. Jour. Dis. Child., 1923, XXV, 107.
9 Tarr, E. M.: A Satisfactory Method of Obtaining Blood for Diagnostic Purposes in Infancy. Preliminary Note on Longitudinal Sinus Transfusion. Canad. Med. Assn. Jour., 1917, VII, 226.
10 Moss, W. L.: Simplified Method for Determining the Isoagglutinin Group in the Selection of Donors for Blood-transfusion. J A. M. A., 1917, LXXII, 1905.
11 Sanford, A. H.: Selection of Donor for Transfusion. 260, Surg., Gyn. and Obst., Mar., 1918.
Brines, C. A.: The Transfusion of Unmodified Blood. Arch. of Surg., 1923, Sept., 309.
12 Radvin, I. S.: Reactions in Transfusions. Surg. Clin. N. Am., 1924, IV, 289.
13 Tice, F.: Practice of Medicine. W. F. Prior Co., Inc., Vol. VI, 786.
14 Copher, W. F.: Blood Transfusion: A Study of Two Hundred and Forty-five Cases. Arch. of Surg., 1923, July, 126.
15 Loehr, W., and Loehr, H.: The changes in the Physicochemical Structure of the Blood Plasma with Accelerated Sedimentation on the Blood Cells Following Treatment with Irritants, Surgical Operations and Diseases (Uber die Veraenderung der Physikalishchemischen Struktur der Blutfluessigkeit bei beschleunigter Blutloerpechensenkung im Gefolge von Reiskoerpertherapie, chirurhischen Operationen und Erkrankungen). Ztschr. f. d. ges. expr. Med., 1922, XXIX, 139.
16 Fullerton, A., Dreyer, G., and Bazett, H. C.: Observations on Direct Transfusion of Blood; Description of a Simple Method. London, Lancet, 1917, CXCII, 715.
17 Bowers, C. A., and Trattner, H. R.: Repeated Venesection-Blood Transfusion in Anuria. Surg., Gyn. and Obst., 1924, Aug., 229.
18 Colebrook, L., and Storer, E. J.: On Immuno-transfusion. Lancet, 1923, CCV, 1341, 1394.
19 Stegemann, H.: Haemostasis Induced by Blood Transfusion (Blutstillung durch Bluttransfusion). Arch. f. klin. Chir., 1923, CXXII, 759.
20 Halbertsma, T.: Concerning the Quantity of Blood Administered in Blood Transfusion (Ueber die Dosierung des Blutes bei Bluttransfusionen). Nederl. Tijdschr. v. Genesk., 1922, LXVI, 1272.
21 Leebron, J. D.: A Preliminary Report on Blood Transfusion in Malnutrition and Infantile Atrophy. New York Med. Jour. and Rec., 1923, CXVIII, 289.
22 Polak, J. O.: The Pathology of Pelvic Infection and Its Present-day Therapy. Presented at annual meeting of New Haven County Med. Assn., Apr. 23, 1925.

STUDIES OF THE VITAMIN POTENCY OF COD LIVER OILS

XVII. The Vitamin Potency of Salmon Body Oil

BY ARTHUR D. HOLMES AND MADELEINE G. PIGOTT

Research Laboratories, The E. L. Patch Company

Of the five species of salmon that are of commercial importance, the red, or sockeye, salmon (Oncorhynchus Nerka) is the most important commercially. This salmon is in especial demand for canning and pickling. On this account, attention has been given to the body oil of this species of salmon.

The salmon body oil which was used in the experiments reported below was supplied by the U. S. Bureau of Fisheries. It was obtained from three sockeye salmon, one male and two females, which had a total weight of nineteen pounds. As is well known, salmon are taken principally during the spawning season. These fish were, therefore, at the active stage of the reproductive cycle. They were taken at Yes Bay by Bureau of Fisheries representatives, who later separated the body oil at the Bureau of Fisheries laboratories.

The oil was prepared by cooking the edible portions of the fish in water. As the tissues softened, the oil was released and rose to the surface. It was skimmed off as completely as possible and separated from all particles of tissue by filtering. It was then decanted from the water with which it had been in contact. On analyzing the oil, it was found to have the following characteristics:

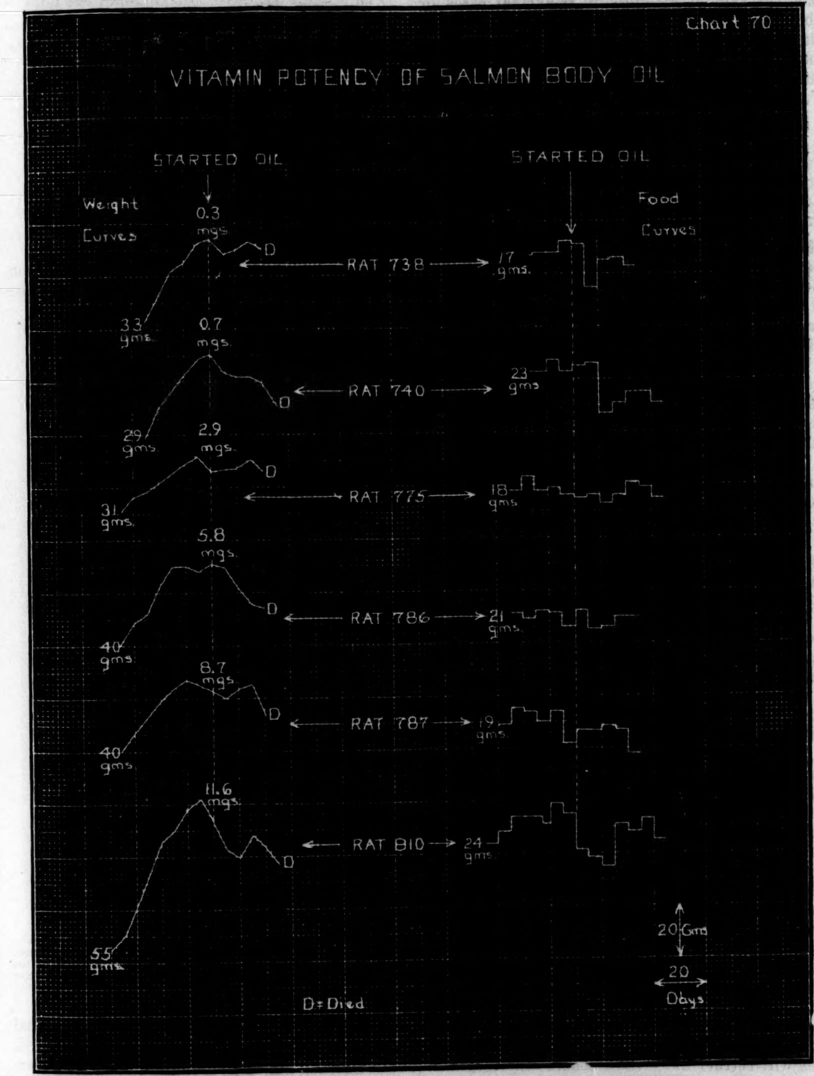
Spec. Gravity at 25° C.	Ref. Ind. at 20° C.	Sapon. Value	Iodine Number	F. F. A. Per Cent.
0.9196	1.475	187.7	142.2	0.7717

In general, the characteristics of this oil are quite similar to those of average cod liver oil; the refractive index is slightly less than that of medicinal cod liver oil. The salmon oil was of a deep red color, which is a marked contrast to the straw-yellow color of medicinal cod liver oil.

The vitamin potency of the salmon oil was determined by the method which has been followed in this laboratory[1]. The animals' reserve of vitamin A was exhausted by continued feeding of a synthetic diet consisting of casein 18%, peanut oil 22%, corn starch 28%, milk sugar 28%, and salt mixture 4%. When the animals gave evidence of exhaustion of their reserve of vitamin A, the experimental diet was supplemented with salmon body oil in amounts varying from 0.3 milligrams to 11.6 milligrams daily.

The accompanying chart supplies detailed data concerning the experimental animals' food consumption and change in body weight during both the pre-experimental and experimental periods. As will be noted, none of the experimental animals made any noticeable increase in body weight as a result of feeding the salmon body oil. In general, the experimental animals lived from twenty to twenty-five days, but all lost more or less weight during this period, and all died before the termination of the usual thirty-five-day experimental period.

From the results obtained, it is evident that the vitamin A potency of the salmon body oil under investigation is not comparable with that of medicinal cod liver oil made by the steam process.



It is hoped that no one will assume that the results of this study of the vitamin A potency of a specially prepared body oil from sockeye salmon apply to the salmon body oil contained in commercial canned salmon. In view of the recently published results of Eddy and Kohman[2] which show commercially canned fruits and vegetables to be much better sources of vitamins than had been generally assumed, it is decidedly unwise in the absence of any data to make a definite assumption concerning the vitamin potency of commercial canned salmon.

Data on this point are, however, needed, for according to statistics for the year 1923 as reported by the Bureau of Fisheries, the domestic pack of salmon amounts to 6,500,000 cases or about 310,000,000 pounds of canned salmon, and since canned salmon contais 10.84%[3] of oil, it may contribute 33,820,000 pounds of salmon body oil to the human dietary during a year. From this, it is evident that definite data concerning the vitamin content of commercially canned salmon are not without economic significance.

REFERENCES

1 Potency of Pollock Liver Oil. Jour. Metab. Res., Vol. 2, No. 3, Sept., 1922.
Vitamin A Potency of Hake Liver Oil. Ind. and Eng. Chem., Vol. 16, No. 4, Apr., 1924.
Butter Fats Produced on Summer Feeds. Ind. and Eng. Chem., Vol. 17, No. 1, Jan., 1925.
2 Ind. and Eng. Chem., Vol. 16, No. 52, p. 126 (1924).
Ind. and Eng. Chem., Vol. 17, No. 1, p. 69 (1925).
3 D. K. Tressler: Marine Products of Commerce, Chemical Catalog Co., New York, 1923, p. 387.

SPECIAL PERIOSTETOMES FOR CLEFT PALATE WORK

BY BENJAMIN BRABSON CATES, M.D.

If one ponders the mechanism of the velum palati, one may readily see the folly of making slashes through the velum to bridge the defect in cleft palate operations.

In order to understand the mechanism of the velum it is well to review the anatomy of the soft palate.

For practical purposes the velum may be considered as a pyramidal or triangular box of mucous membrane, containing in its interior, blood vessels, nerves, lymphatics, adenoid tissue, muciparous glands and muscles.

The surgeon in operating for cleft palate wants to keep in mind the importance of preserving intact the *blood vessels, nerves and normal laminated arrangement of the muscles.*

This triangular box of mucous membrane with its contents is attached, "as it were, to the horizontal surface of the palate bone by the broad aponeurosis of the palate"—which aponeurosis is derived from the tensor palati muscle; by its sides it is continuous with the walls of the pharynx; its apex pointing downward hangs free in the back part of the mouth; its upper or posterior surface is continuous with the floor of the nose; its under or anterior surface is continuous with the muco-periosteum of the hard palate.

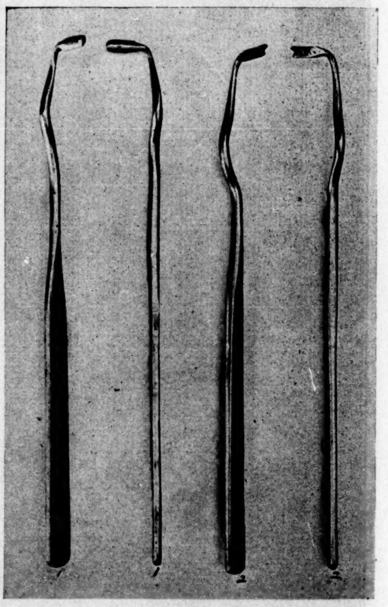
The muscles of the velum, five on each side, have a *laminated arrangement,* each fusing with its corresponding fellow in mid-line under normal conditions.

The main point to keep in view in repairing defects of the palate is to preserve this laminated arrangement of the muscles as far as possible—that is, to keep each corresponding pair of muscles in the same plane with innervation intact.

Now, it will be allowed no two pair of muscles have the same tension. If such a postulate is accepted, it may be assumed if the velum is cut away from the hard palate with knife or scissors and lateral slashes are made in the velum the normal laminated arrangement of corresponding muscles is disturbed, as some cut muscles will retract more than others and they will never occupy the same plane and their normal innervation is disturbed.

This will give them an uneven pull—a see-saw effect—which will prevent symmetrical functioning.

This uneven pull makes proper pronunciation of words more difficult. Again slashing the velum divides the nerves supplying individual muscles so that normal innervation is destroyed.



Periostetomes for mobilizing the aponeurosis of the palate. 1. Front and lateral view of spatula periostetome for mobilizing the aponeurosis of the palate from the horizontal plate of the palate bone. 2. Front and lateral view of curved periostetomes for mobilizing the aponeurosis of the palate from the posterior border of the horizontal plate of the palate bone.

Keeping in view this normal laminated arrangement of the palate muscles with their normal nerve supply intact; the next point to stress, in doing cleft palate operations, is to restore as near as possible the normal anatomical attachment of the muscles of the soft palate.

Since there is no bony plate to which to anchor the velum across the bony cleft, the nearest approach to normal conditions is to make a common tendinous center over the fissure, so corresponding muscles may fuse in the same plane. This preserves their laminated arrangement and favors symmetrical action.

This may be done by using the aponeurosis of the palate as a common or tendinous center over the fissure. This aponeurosis may be used if properly mobilized. To accomplish such a mobilization of the palate aponeurosis and preserve the normal laminated arrangement of the muscles with the minimum amount of trauma I have devised certain periostetomes that have served me well in my work.

Having mobilized the muco-periosteum laterally from the alveolus to the cleft, and back to the aponeurosis of the palate, I push the aponeurosis of the palate to the posterior border of the hard palate with my spatula shaped periostetome, and then separate it from the posterior border of the hard palate with my curved periostetome.

In doing such a mobilization the surgeon has broad raw surfaces for fusion with corresponding muscles across the cleft and he has preserved the normal laminated arrangement of the muscles intact, nor has the normal innervation of the muscles been disturbed, neither has the blood supply been damaged.

The flaps then, when properly mobilized, easily fall together and only need to be held in place with the proper sutures properly placed until fusion occurs. Under such circumstances slashing the velum is unnecessary and plates should be discarded.

SUMMARY

The object in cleft palate work should be to have a velum as near the normal arrangement as compatible with the local deformed conditions; one that is pliable and free from scars.

Since there is no bony attachment in midline this is best accomplished by having a common tendinous center for the attachment of the muscles. This may be done by using the aponeurosis of the palate, which gives broad raw surfaces for fusion across the cleft, preserves the normal laminated arrangement of the muscles, and leaves their normal innervation intact.

This makes for symmetrical action of the muscles and a more normal pronunciation.

MENTAL WOUNDS

BY CLARENCE A. BONNER, M.D.

SURGICALLY a wound is defined as an injury either external or internal and involving the solution of continuity of a surface. By a mental wound is meant an emotional injury which is suffered and which is duly recorded in the archives of the mind. These wounds are fairly constant in occurrence throughout our lives. No one is immune from them; they are unavoidable and represent the toll exacted by life. In many instances, however, they leave scars which even time does not efface. In the normal, well balanced perhaps they often serve as a proper stimulus in one way or another. On the contrary, if the injury is poignant in the beginning, remains unhealed and is aggravated from time to time, the resulting condition becomes of great import to the psychiatrist.

The surgeon is fortunate in the respect that the wounds he deals with are visible, or can be made so; they can be treated with formidable antiseptics and stimulating ointments, kept sterile by fresh, clean dressings. Healing takes place and perhaps a cicatrix results, causing no pain and soon forgotten unless it happens to occur in a too conspicuous situation.

Not so with the psychiatrist. The field of operation is never visible. The wound must be located often through long and tedious examination, analysis and probing of the devious channels of the unhealthy mind. His patients, because of their unfortunate condition, cannot come and say, "Here is my wound, please heal it."

It has been previously stated that all of us are susceptible to these mental traumata, but fortunately in many instances the wound, if it ever reaches that dignity, is logically dealt with and is shortly submerged beneath consciousness and never reappears in its full potency. This is the reaction of the normal person. On the other hand, if the field is fertile, and if a neuropathic taint exists, seeds of future unhappiness are sown.

Most mental patients, particularly of the psychoneurotic group, will, after a searching examination, admit certain distressing land marks which stand out distinctly in their mental life of the past, and from whose unhappy influences they cannot separate themselves. From these have issued various phobias, doubts and unconquerable fears, with resulting peculiarities and defence reactions to be carried through the remaining years. Normally the intellect has continuity. This continuity may extend abnormally from one distressing period to another, thereby coloring the whole mental attitude and affecting the daily reactions so that outward manifestations become present.

Then in consideration of these cases, two factors are of outstanding interest; First, the unusual emotional sensitivity of the individual, and secondly, the probable pre-existing neuropathic tendency. The former may be a symptom of the latter. That this type of case suffers acutely cannot be denied, since we are dealing with a highly sensitive emotional state rather than the deterioration which marks the dementia praecox state. Abstracts from two illustrative cases are cited below because of the similarity in onset, symptoms and resultant condition. The second case illustrates conclusively the value of early treatment in a hospital for mental disease.

The case of W. I.

Date of birth 1867. Was healthy as a child; secured grammar school education and became a copyist. By temperament "nervous," sensitive, and inclined to be irritated by trifles. At 18, her father attempted suicide by hanging, and she, discovering him in this condition, cut him down. Patient kept this occurrence secret until the father died some years later. From this time on until her commitment at the age of 44, she suffered greatly but was forced to work to help support the family. At the time of commitment she was afflicted with various unnatural impulses, threatened other members of the family, expressed morbid fears and insisted on washing her hands continually to rid them of germs.

Her hospital history has been more or less stormy. She has always been scrupulously neat, but very quarrelsome and in trouble most of the time with her fellow patients. Has been tried at home on visit, but because of the persistence of the symptoms mentioned above has never been able to remain away from the hospital very long. It is quite probable that this patient's activities have become so fixed that a life long hospital residence will be necessary. *Diagnosis*—Psychoneurosis, Psychasthenic Type.

The case of F. R.

Date of birth 1893. Childhood healthy; 2 years in high school; a fairly good student. Did not take very much interest in anything, inclined to be very impulsive. Spent a great deal of time in day dreaming and was extremely sensitive to any criticism. Rather unfriendly and very bashful. At 21 years of age discovered her mother a suicide by hanging, and never recovered from this shock. Constantly had thoughts of suicide herself, and at one time made a half hearted attempt. Continued to do housework until 30 years of age, although sorely tried throughout these nine years. Finally, at this time, unable to stand it longer, was admitted to one of our State mental institutions for observation and care. Under the regulated hospital life and medical attention given she improved in a few months. At this time she is in a private home, under watchful and kindly care. To date she is making progress, although interrupted from time to time by an occasional hysterical episode. *Diagnosis*—Psychoneurosis, Psychasthenic Type.

Both of these cases were brought on by causes liable to produce the most severe shock, and both cases show a similar reaction. There are a multitude of conditions which may range from trifles to conditions as serious as those mentioned above, which ultimately may produce the most direful results depending entirely upon the temperament of the individual who happens to meet with such unfortunate incidents. As time goes on the progress in the second case cited above appears more favorable and points out forcibly the necessity of very early intensive attention to cases of this kind.

Mental symptoms should not be translated on a physical basis unless there is definite organic proof, and the psychoneuroses are so important and met with so frequently that this subject should be stressed in our medical schools, so that the physicians entering the community, while not specialists in psychiatry, may have a working knowledge of the psychoneuroses so that these cases will be recognized in proper time. Most of these cases are painfully aware of their conflicts and deficiencies, and are constantly on the defensive to establish false composure and to save their emotional makeup from assault with its harmful consequences to them. Frequently these wounds occur in adolescence, and are added to from time to time, gradually producing a chain of malignant events which colors the introspection of the psychoneurotic and does not permit of enjoyment of the pleasant occurrences which normally should form a portion of their mental life.

Another group that we meet with are the unfortunate failures striving for unattainable ideals, endeavoring to reach a mark of perfection which is entirely beyond their grasp. Not realizing this, they discount themselves and perhaps develop a serious state of mind due to lessened self-appraisal. Lack of courage to face everyday problems is closely allied to the psychoneurotic state. Many of these so poorly equipped spend much of their time overcoming their inhibitions, doubts and fears. This perhaps saps much of the courage that the normal individual uses in the daily scheme of life. The former class cannot adapt themselves to the ordinary because their mental constitution will not permit it, and the effort they are apt to make is extremely costly physically and mentally. Being swayed by such unnatural doubts and fears, they lose sight of their goal in life, become confused and often founder in this confusion. The unduly introspective sees only the somber aspect of his makeup and this view may be quite erroneous.

There is a splendid opportunity for the family physician in the realm of psychiatry because of his close contact with the individual patient in the home. Early and mild mental symptoms should be interpreted very carefully, and treated in accordance with the best understanding that may be had at this time. This plan, of course, is not recommended until every physical ailment is excluded.

Each one cherishes certain thoughts and desires which are never expressed except at some unguarded moment when the flood of emotion reaches the overflow point. Call it mental catharsis if you will. It may be likened to the power of the good, old fashioned doctor so to obtain the confidence of his patients as to allow them to pour forth their mental as well as their physical sufferings, thus affording them great emotional relief with a consequent betterment of the physical condition. He was the first practitioner of mental hygiene without any knowledge of modern psychology, and after all perhaps the pill box often got credit for achievements of which it was entirely innocent.

Thus the best treatment of the above discussed conditions is mental hygiene—preventive. The unusually self conscious individual should make every effort to overcome this condition, and, failing in this, should seek the counsel of a competent psychiatrist. At the proper time much can be done either in personally adjusting the individual or by seeking to better his environment.

The stimulating of confidence and ambition will often do wonders for the psychoneurotic, and certainly kind words of encouragement have great value. Specific treatment of this class of cases is brought about by scheduled living. The more hours devoted to pleasant work skilfully arranged, the better. Calling attention to comparative conditions is not amiss, because there are always others less fortunate. This simple but truthful procedure may aid the afflicted to place their difficulties in the background and develop a more optimistic outlook on life, and it will do away with the tendency to self pity which is so prevalent in this group. The confidence inspired by tactful kindliness is infinitely more lasting than that produced in any other way.

The State hospitals will continue to add to their population, but a crusade by every physician with the conviction that a thorough understanding of the mental life of the patient is fully as important as the location and healing of a definite lesion, will, in a measure, help to adjust many cases in the community and prevent the need of hospitalization

Having reached this point we should transfer our attention to these community cases that are endeavoring to hold up their end although inadequately equipped. This is a prophylactic step in mental hygiene of the utmost importance. It is true that we cannot supply the essentials lacking in the psychoneurotic which would seem to mean success in life, but, as physicians, we are able to smooth the pathway for them whenever opportunity arises. Mental hygiene must represent a vigorous and active beneficial movement dedicated to those who are in need of it. Even a physician skilled in mental diseases is apt to accept the words "Mental Hygiene" but really expects the other fellow is going to apply it when it should be applied by all of us daily. There is opportunity for the every day application of mental hygiene even in our work, our homes and our social life, for here we meet others not in the same manner as in the consulting room, but rather revealing their strength and weakness uncamouflaged. Until mental hygiene is appreciated by the general practitioner as an invaluable asset to his daily practice, it will not achieve its greatest purpose

POLICE AND FIRE SURGEONS CONVENTION

The fourth annual convention of the Association of Police and Fire Surgeons and Medical Directors of Civil Service Commissions of the United States will be held in the Hotel Pantlind, Grand Rapids, Michigan, on October 6th and 7th, according to an announcement made by Dr. Harry M. Archer, Honorary Medical Officer of the New York Fire Department, who is President of the Association.

The medical men will be the guests of Dr. A. H. Edwards, the City Physician of Grand Rapids.

One of the important matters to occupy the attention of the doctors in convention is the proposed recommendation by Dr. Archer to standardize the medical and physical requirements of civil service employees, especially the police and firemen in the larger cities of the country. These proposed standards will be submitted to the convention for general discussion and definite action.

SING SING HAS FEWER DRINKERS THAN DRYS; MORE SINGLE OFFENDERS THAN MARRIED ONES

More criminals received at Sing Sing are abstainers from liquor than drinkers, more are single than married and more were employed than were idle when they got into trouble, according to statistics given out today by Warden Lewis E. Lawes relating to 1,217 offenders admitted during the State fiscal year that ended on July 1 last.—*New York Times*

INSANITY AND DURABILITY CLAIMS

Insanity was responsible for twenty-four per cent of the approved total and permanent disability claims allowed Prudential policyholders during the last five years, according to an analysis of claims for disability benefits. It ranked only second to tuberculosis, which was the cause of total disability in thirty-five per cent of the cases.—***Prudential Service Bureau.***

Case Records
# of the
Massachusetts General Hospital

ANTE-MORTEM AND POST-MORTEM RECORDS AS USED IN WEEKLY CLINICO-PATHOLOGICAL EXERCISES

EDITED BY
RICHARD C. CABOT, M.D., AND HUGH CABOT, M.D.
F. M. PAINTER, A.B., ASSISTANT EDITOR

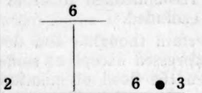
CASE 11421

MEDICAL DEPARTMENT

A Boston colored boy of fifteen entered through the Emergency Ward April 8 complaining of shortness of breath and swelling of the legs. He was adopted when three months old, and never saw his father or mother. From the age of eleven he had smoked twenty cigarettes a day. He had mumps and measles in childhood. He had always been rather short of breath on sustained exertion, though he was able to play with other boys and even learned to swim. Two years before admission he had an attack of rheumatism, making the feet and knees and later the shoulders and elbows painful on motion, and lasting in all a month. One year before admission he had a similar attack affecting the same joints, but less severe and lasting only two weeks. A little less than a year before admission he was sent to a reform school for stealing.

Two months before admission he began to be extremely short of breath on running or climbing stairs. He was sent to the school hospital, put on a milk diet for two weeks and seemed to improve, but a week and a half after leaving the hospital grew rapidly worse again. A month before admission he was put to bed, where he had been ever since without improvement. Two weeks before admission his feet and legs began to show swelling which had been steadily increasing. He had had some fever during his hospital stay. He had been unable to lie flat without discomfort. For the past two months he had had mild unproductive cough. When he became markedly dyspneic from exertion he had dull epigastric pain. During the past two months his appetite had been poor.

Examination showed a fairly well nourished boy in marked respiratory distress. The mucous membranes were pale. The teeth were carious. There was pyorrhea. The tonsils were not particularly enlarged but were cryptic. The lung expansion was limited. There was marked dullness at both bases, with râles. The heart was markedly enlarged, particularly in the region of the auricles. The location of the apex impulse is not recorded. The percussion measurements are shown in the diagram. There was a systolic and diastolic murmur and a systolic thrill at the apex. The first sound was sharp. The blood pressure was 112/60. The rate was 124. The abdomen was swollen, dull in the flanks. The genitals and extremities showed marked edema.



Heart measurements by percussion.

The temperature was 103° the morning after entrance, afterwards 95.5° to 99°, the pulse 80 to 140, the respiration 17 to 38. The urine was cloudy at the single examination, specific gravity 1.030. The amount was normal when recorded. The hemoglobin was 80 per cent. There were 31,200 to 18,800 leucocytes, 79 per cent. polynuclears. The reds were normal. A Wassermann was strongly positive.

The boy was given Karell diet, morphia, digitalis and salicylates. The evening of April 11 he complained of great precordial pain and was very restless. Later the pulse became very weak and rapid and he gasped for breath. It was noted that he had the teeth of congenital lues. It was thought he would not survive the night. The next day his blood pressure was normal, 130/75. April 13 he had attacks of choking, apnea and cessation or marked slowing of the heart beat. His hands were icy cold. That day he died.

DISCUSSION

BY DR. WILLIAM H. SMITH

NOTES ON HISTORY

"Boston colored" may have some bearing as an etiological factor I do not recognize.

Shortness of breath and swelling of the legs in any boy of fifteen would suggest rheumatic heart disease. Congenital heart would be associated with symptoms before fifteen, probably. Fifteen is young for the heart associated with chronic glomerulonephritis or syphilis; arteriosclerotic degeneration would be indeed precocious at this age, even if fathered by syphilis.

Twenty cigarettes daily since the age of eleven is an excess no matter what their composition may be.

"Shortness of breath on sustained exertion, always," may imply some congenital abnormality of the heart, a persistent foramen ovale, for example, with other anomalies.

Rheumatism at thirteen lasting a month, and again at fourteen, offers adequate opportunity for endocardial or pericardial damage.

Stealing, with entrance to reform school, suggests he was caught, possibly handicapped in his escape by his cardiac condition.

Shortness of breath of an extreme grade on climbing stairs or running leads us to infer fresh damage to the heart or failing compensation. Improvement may have followed from the milk diet or the hospital rest. It was only temporary, however, since he grew worse after ten days. One month in bed without improvement suggests a serious acute condition or a nearly completed chronic heart affection.

Gravity edema points to the heart.

Fever during hospital stay in any post-rheumatic condition makes us fear some fresh valve infection or pericardial damage.

The cough may have been the evidence of passive congestion of the lung, as may the dull epigastric pain, from passive congestion of the liver.

NOTES ON THE PHYSICAL EXAMINATION

On examination the tonsils were present, the probable source of his repeated rheumatic attacks.

Passive congestion is again suggested by the dullness at the bases of the lungs with râles, probably some hydrothorax also.

Enlargement of the heart in the region of the auricles; had it been stated in the region of the left auricle one would not be surprised, this is so common in extreme grades of mitral stenosis. One approaches enlargement in the region of the *auricles* with caution—some hidden trap. Could there be persistent thymus? Is there pericarditis with effusion? Is there some pathological heart condition laid down at or before birth, some anomaly upon which infection of the valves or pericardium has been added?

I have frequently found it of value to know the position of the apex.

DIFFERENTIAL DIAGNOSIS

The sharp first sound, the systolic and diastolic apical murmurs, suggest mitral disease. Yet none need be present, since a pericarditis with relative insufficiency of the mitral valve could explain the findings, all but the sharp first sound. This is best explained by organic mitral valve damage.

Judging from his blood pressure and the single urinary examination chronic nephritis is out of the picture.

The fever and leucocytosis make fresh endocarditis or pericarditis most likely.

I do not believe syphilis plays any important part in the case.

The rheumatic history, the progressive failure of compensation, make some acute damage engrafted on a previous pathological heart or a heart the subject of endocarditis or pericarditis most likely.

I do not know whether there is any relation between the marked slowing of the heart and digitalis therapy.

The one thing hard to explain is the dullness in the region of the auricles. Fluid in the pericardium, mediastinal tumor, persistent thymus, or some congenital anomaly of the heart would have to be thought of. From the evidence here present no accurate deduction could be drawn.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Rheumatic heart disease.
Mitral regurgitation.
Acute endocarditis.
Acute pericarditis with effusion.
Congestive failure.
Congenital lues.

DR. WILLIAM H. SMITH'S DIAGNOSIS

Chronic endocarditis of the mitral valve.
Question of acute endocarditis with or without acute pericarditis.

ANATOMICAL DIAGNOSIS

1. *Primary fatal lesions*

Chronic endocarditis of the mitral and aortic valves.
Subacute pericarditis.

2. *Secondary or terminal lesions*

Hypertrophy and dilatation of the heart.
Chronic passive congestion.
Hydrothorax.
Ascites.
Anasarca.

3. *Historical landmarks*

Slight chronic pleuritis.
Chronic perihepatitis and perisplenitis.

Dr. Richardson: The head was not examined.

The abdomen was moderately distended, the wall soft. There was edema of the penis and dependent portions of the trunk and the lower extremities. There was some edema in the region of the left elbow. The finger tips were round, rather blunt, somewhat purplish.

There was a small amount of subcutaneous fat. The muscles were wet.

The peritoneal cavity contained 1700 c.c. of thin pale clear fluid. The peritoneum and appendix were negative. The stomach and intestines showed well marked chronic passive congestion.

The liver was 7½ cm. below the costal border. The diaphragm was at the fifth rib on the right, the sixth rib on the left.

The right pleural cavity contained 1000 c.c. of thin pale clear fluid, the left pleural cavity 400 c.c. of similar fluid. There were a few pleural adhesions to the pericardium on each side. The trachea and bronchi contained much frothy brownish red fluid. The mucosa was slightly reddened. The bronchial glands were slightly enlarged, brownish red, soft, juicy.

The lung tissue generally was that of chronic passive congestion.

The two layers of the pericardium were bound down together by brownish, shaggy, somewhat membranous, rather soft fibrinous material, more or less easily peeled off in places. At the base this was somewhat more firmly adherent and when stripped left a reddened, slightly granular surface. In this meshwork in the pericardium there was about 100 c.c. of thin reddish cloudy fluid. The heart weighed 440 grams; much enlarged. The myocardium was of good consistence, pale brown-red. The right ventricular wall was thick, 5 mm., the left ventricle wall 12 mm. The columnae carneae were fairly well marked on the left, thick on the right. Cavities: left, slight dilatation of the ventricle, considerable of the auricle; right, much dilatation. The auricular appendices were negative. The valve circumferences were mitral 8 cm., aortic 6 cm., tricuspid 12 cm., pulmonary 7½ cm. The curtain of the mitral valve showed much diffuse fibrous thickening with some irregular nodular thickening along the free margin. The chordae tendineae were slightly shortened and thickened. In places there were old verrucose granulations. The aortic valve along its free margin showed a slight amount of fibrous thickening and in places verrucose granulations. The other valves were free, negative. The aorta and great branches were negative.

The liver and spleen showed chronic passive congestion.

The wall of the gall-bladder was edematous but was otherwise negative.

There was a broad band of old adhesions extending from the liver to the diaphragm and one from the spleen to the diaphragm.

The kidneys showed chronic passive congestion. No infarcts were found in any of the organs in this case.

The skin over the lower extremities showed here and there small brownish red crusty areas with some slight loss of substance. There were a few similar areas on the trunk and one on the back of the right wrist. The left side of the anterior thoracic wall bulged slightly.

CASE 11422

Medical Department

A colored man forty-nine years old entered March 26 in coma. The history was obtained from his wife. One brother had died suddenly of unknown cause. The patient drank whiskey to excess. For fifteen years he had complained of backache and headache and had not slept well. He frequently vomited before breakfast. For years he had urinated three or four times at night. At times he complained of dyspnea.

At noon the day before admission he suddenly fell in the doorway and was found unconscious. There was no suspicion of any injury previous to the fall. He had never had a similar attack.

Examination showed a well nourished man in coma, with Cheyne-Stokes respiration. Pressure on the supraorbital nerve caused slight motion of the legs. There was no odor of alcohol on the breath and no evidence of injury to the head. The apex impulse of the heart was seen and felt in the sixth space 11 cm. from midsternum, 2 cm. outside the nipple line, corresponding to the left border of dullness. The right border was 5 cm. from midsternum. The action was regular, the sounds of fair quality. There were no murmurs. The aortic second sound was accentuated. The artery walls were thickened and tortuous. There were many moist medium râles throughout both chests. The right pupil was larger than the left. Both were small and did not react. There was double Babinski. The cremasteric and abdominal reflexes were absent. The left arm was spastic, with increased reflexes. The right arm was apparently normal. There was no edema.

The temperature was 100°, the pulse 80, the respiration 28. The blood was normal. The urine was not examined. A lumbar puncture gave bloody fluid under increased pressure.

The patient died without regaining consciousness or showing any new signs.

Discussion

by Dr. Maurice Fremont-Smith

Backache, of course, means nothing. Headache, poor sleep, vomiting before breakfast, may be simply the results of excess drinking, as a secondary chronic gastritis and atrophic intestinal canal, or may be the signs of chronic nephritis with hypertension. The fact that he had passed the urine at night again may suggest a chronic nephritis or a prostatic enlargement. Further details as to the urinary symptoms would help us to make a differentiation.

Sudden profound unconsciousness usually means cerebral hemorrhage or embolus. If one knows that the onset is actually a sudden one and if trauma to the head be eliminated, one of these two conditions is the probable cause. When a patient is found, however, in coma and the condition of onset is not determined, one has to think of uremia, diabetes, meningitis, syphilitic or acute, drug poisons, morphin, opium or alcoholism. It must not be forgotten that brain abscess or tumor may give rise to sudden onset of convulsions or sometimes coma. Likewise, pneumonia may cause coma in a very few hours after onset. Cheyne-Stokes respiration suggests intracranial pressure. It must never be overlooked that the odor of alcohol in the breath does not necessarily mean coma from alcoholism.

The heart here is enlarged both to right and left. The accentuated aortic second sound suggests hypertension, although we have no blood pressure record. The complete absence of murmurs is against an infarct, which when taking place to the brain usually must take origin from the mitral or the aortic valve, and also argues against syphilitic cardiovascular disease.

The pupils in cerebral hemorrhage are usually equal, sometimes unequal, and frequently do not react to light if the coma is deep. Very small pupils occur in hemorrhage in the region of the pons. A lesion here, however, usually causes third nerve paralysis.

The Babinski reaction occurs wherever the lateral pyramidal tracts are interfered with, whether this be at their origin in the cerebral cortex, in the region of the internal capsule, or in the cord. As extensor reflex is evidently the response to stimulus which would normally take place were the cerebral inhibition not present, whenever for one reason or another this inhibitory power of the cerebrum is interfered with or cut off the extensor reflex takes place. The fact that the left arm was spastic places the lesion on the left side, and the fact that the arm only is affected, if this be actually the case, would place the lesion in the cortex rather than in the internal capsule, where even a small hemorrhage would involve tracts leading to a larger area of the body.

We are never safe in making a diagnosis without an examination of the urine. I recall one case in which the urine examined post mortem showed a large amount of sugar which had not been suspected during life. A small amount of sugar in the urine, however, often occurs in cerebral hemorrhage.

Bloody fluid in a lumbar puncture of course may be due to faulty technic. At the time of puncture, however, blood caused by putting a needle into a vein and that actually mixed with the spinal fluid may be differentiated. The fact that the fluid was under increased pressure is another argument for cerebral hemorrhage.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Cerebral hemorrhage.

DR. MAURICE FREMONT-SMITH'S DIAGNOSIS

Arteriosclerosis.
Cerebral hemorrhage, probably left motor cortical region.
Chronic nephritis?

ANATOMICAL DIAGNOSIS

1. *Primary fatal lesion*

   Cerebral hemorrhage into the left hemisphere with rupture into the ventricles.

2. *Secondary or terminal lesions*

   Slight arteriosclerosis.
   Slight hypertrophy and dilatation of the heart.

3. *Historical landmarks*

   Chronic perihepatitis and perisplenitis.

Dr. Richardson: The meninges were negative. The vessels of Willis showed scattered along their walls innumerable small fibrous plaques. The sinuses and middle ears were negative. There was a considerable amount of fluid blood at the base of the brain. The brain in the region of the left hemisphere was boggy. In the region of the wall of the third ventricle blood oozed through from the ventricle. The cavities of all the ventricles were distended and filled with fluid blood and blood clot. The tissue of the right hemisphere and of the cerebellum, pons, medulla and crura was negative. The tissue of the left hemisphere showed a large area within it where the brain was disintegrated and infiltrated with a large amount of blood and blood clot. The basal ganglia on the left were largely disintegrated and infiltrated with blood and blood clot. The disintegration and blood infiltration were continuous with the blood and blood clot in the left lateral ventricle.

The skin in the lumbar region near the spinal column showed a brown-red spot, tap wound. The bandage over this at the time of necropsy was soaked with blood.

The thoracic and abdominal organs were examined *in situ* and showed only the following conditions for note. The heart showed slight hypertrophy and dilatation. The aorta showed a slight amount of fibrosis and a few calcareous areas. There was a slight amount of perihepatitis and perisplenitis.

A frank case of a cerebral hemorrhage with rupture into the left ventricle, associated with arteriosclerosis of the vessels of Willis.

CASE 11423

Surgical Department

A Canadian clergyman of forty-eight was referred from the Consultation Clinic May 20 complaining of indigestion. His father died of tuberculosis of the lungs, his mother of chronic bronchitis (probably tuberculous). The patient had pneumonia at two and four years and scarlet fever at three years. In childhood he had measles, followed by chronic cough for a year. Since he was nineteen he had had vitiligo, which had not changed for years. Twenty-three years before admission and last summer he had hives. At twenty-eight he had chronic sore throat for two months, with difficulty in swallowing. A year before admission he had pleurisy with pneumonia. For the past four years he had had increasing dyspnea on exertion, especially marked during the last few weeks. Since his last attack of pneumonia he had urinated once every night. Recently there had been slight dribbling following micturition.

For years he had had gas and regurgitation, generally coming on an hour or two after eating, particularly after acid foods, and relieved by soda, occasionally temporarily by food. About twenty-seven years before admission he had an attack of "congestion of the liver" with pain in the right upper quadrant radiating to the upper chest and shoulder confining him to bed for three weeks. He had jaundice and severe constipation. Since that attack he had had several similar but milder ones, with jaundice. Seven years before admission a new symptom appeared, a period of a few minutes of an indescribable unpleasant sensation all over his body making him feel like squirming. Two and a half months before admission he noticed that greater varieties of foods brought on gas and discomfort. Then he had attacks of diarrhea alternating with more severe constipation than usual. About once a week his bowels would become very constipated and not affected by the usual dose of cascara. On taking this for three days he would have diarrhea for two or three days. For two months his appetite had been diminished. Six weeks before admission he began vomiting immediately to two hours after meals, rarely after breakfast. The vomiting became worse until the week before admission, when he went on a soft solid diet which gave some relief. Four weeks before admission he began to have burning pain in the epigastrium slightly to the left, occurring three or four hours after meals and waking him in the early morning. He was sometimes relieved by a change of position. He did not usually vomit with the pain. Three weeks before admission and two or three times later his ankles were swollen in the morning. For ten days before admission the vomitus showed slight blood streaks. He had occasional vomiting in the evening, food eaten at noon. Two or three times in the last three months he had noticed clay colored stools. Before his first attack of indigestion twenty-eight years before admission he weighed 180 pounds, his best weight. Five years before admission he weighed 165, six months before admisson 157. His present weight was 128 pounds. Most of the loss had occurred in the past two months.

Shows a large irregular filling defect involving the lower part of the stomach and corresponding to the palpable tumor mass. The filling defect stands up along the posterior wall and also involves the antrum and the pyloric sphincter. Peristalsis is absent over this area. There is ~~however~~ no gastric stasis. The first portion of the duodenum appears normal in contour, slightly dilated. ~~The head~~ of the six-hour meal has reached the hepatic flexure. The negative is scratched.

Records of the Consultation Clinic show an additional history of constipation for twenty-five years.

Examination showed a poorly nourished man with evidence of loss of weight. Scattered over the skin of the entire body were spots of vitiligo. The chest showed retraction of the supraclavicular spaces, more on the right. The heart and lungs were normal. In the epigastrium to the left of the midline was a hard mass the size of an orange descending with inspiration, easily felt and possibly seen through the abdominal wall.

The chart was normal. The specific gravity of the urine was 1.012 to 1.020. There was no albumin or sugar. The sediment showed rare leucocytes at one of two examinations. The hemoglobin was 90 per cent., the leucocyte count 1.005, with 58 per cent. polynuclears. There were 4,360,000 reds, with slight achromia, poikilocytosis, anisocytosis and polychromatophilia. A Wassermann was negative. The stools were negative. X-ray showed a large irregular filling defect involving the lower part of the stomach and corresponding to the palpable tumor mass. The filling defect extended up along the posterior wall and also involved the antrum and the pyloric sphincter. Peristalsis was absent over this area. There was however no gastric stasis. The first portion of the duodenum appeared normal in contour, slightly dilated. The head of the six-hour meal had reached the hepatic flexure. The diaphragm was flat on the right side. The costophrenic sinus was obliterated. There was however fairly good respiratory movement. The lung fields were large and bright.

May 23 the patient was discharged, to return for operation.

May 28 he reëntered. Operation was done the same day. He was in fair condition after it. Next day the temperature rose to 103.2°, the pulse to 120, rather weak. He vomited or regurgitated small amounts of dark material frequently. A nasal stomach tube was inserted and the stomach was kept on constant siphon drainage and washed out three times a day. The following day the pulse continued to rise and to grow weaker. He required considerable morphia for pain. His general appearance was bad. The abdomen was flat, and somewhat tender throughout. He was given rectal tap water and subpectorals. June 1 he complained a good deal of abdominal pain. That morning he died.

Discussion

BY DR. EDWARD L. YOUNG, JR.

The past history, although it includes quite a variety of conditions, suggests only the possibility of some tuberculous condition and does not especially suggest that any of his trouble would of necessity be important in the present illness.

The story of gas and regurgitation lasting for years is rather indefinite, and although it might of course be due to a peptic ulcer it also might be nothing but hyperacidity due to poor habits of eating. The story of the attack seven years before admission sounds more like a severe catarrhal jaundice than it does like anything else. It sounds to me as though the real story of his present trouble started two and a half months before admission, when he noticed the increase in his indigestion.

The vomiting which he speaks of suggests that there is pyloric obstruction, but before we can say that with any certainty we must be sure that there is gastric retention, as shown by the recognition of food taken some time before, because vomiting can be due to gastric irritation without retention as well as to pyloric obstruction. The appearance of blood streaks in the vomitus does not necessarily prove that the blood is from the stomach, because the irritation of the esophagus and pharynx from continuous vomiting often results in blood streaks.

The question of clay colored stools is important. I must confess I am a little more gun-shy about that than previously, because we have to be sure that the clay color was indeed the color due to absence of bile before we can believe it is important.

To sum up the evidence given in the history, here is a man who has had indigestion for twenty-eight years. It is obviously impossible to say that he has had cancer for that length of time. It is possible that he has had an ulcer, but we should expect more definite evidence of trouble than he shows, although of course cases constantly occur in which the story is no more definite than it is here. He has had about four months during which this has increased rapidly, and with the loss of weight and the vomiting we are forced to believe that there is some condition present which is important. The relatively short duration of the acute symptoms in a man of his age suggests malignancy more than it does ulcer. I do not believe it is possible without further examination to say any more than that.

The mass in the epigastrium apparently is a very definite thing, as it is easily felt and even seen, and from its description it certainly suggests a mass in the stomach. A gall-bladder would not be so definite as that and would not be at the left of the midline. Moreover these attacks go very well with the story of trouble which we believe is in the stomach in spite of all his previous attacks of jaundice. The high hemoglobin and high red count are against malignant disease. The X-ray is however definite in showing trouble in the stomach, and it is much more suggestive of malignancy than of even old scar ulcer.

With the evidence all in it seems as though cancer of the stomach were the most probable diagnosis, and with a palpable mass the rule of thumb, which is pretty accurate, points toward an inoperable condition. Nevertheless no one can be sure until the abdomen is opened. So that with an absolutely bad prognosis without operation exploration seems to be the only thing to advise. In all of these cases where there has been a great deal of loss of weight it is necessary to bear in mind that even an exploratory operation may result fatally, and if it is considered advisable to do a radical operation the mortality under these conditions is very high.

X-RAY INTERPRETATIONS

The findings are those of malignant disease involving the lower half of the stomach, operability questionable. There is no evidence of metastasis in the chest.

MEDICAL CONSULTATION

The diagnosis lies between gastric and colonic carcinoma. I am inclined to stomach rather than colon because of the definite story of gastric stasis. Because of stasis it may be that surgery (palliative) is worth while, though whether a normal place to attach the loop can be found is far from certain.

DR. YOUNG'S PRE-OPERATIVE DIAGNOSIS

Cancer of the stomach.

PRE-OPERATIVE DIAGNOSIS

Carcinoma of stomach.

OPERATION

Gas and ether. The stomach was very extensively involved with the growth, which extended from the pyloric ring into the upper third of the stomach, occupying the anterior and posterior walls. Glands were palpated in the gastrohepatic and gastrocolonic omentum. The growth was very extensive, but not adherent posteriorly. The stomach was easily delivered into the peritoneal fold. The stomach was apparently obstructed by the growth at the pylorus. Under these circumstances it was decided to do an excision of the stomach. This was carried out without difficulty and the continuity of the intestinal tract restored by the Polya method. The patient left the table in fairly good condition.

PATHOLOGICAL REPORT

The pylorus and a large area of adjoining stomach measuring 11 cm. along the lesser curvature. Portions of both omenta are attached, containing clusters of enlarged lymph nodes. On section there is a large growth which almost completely fills the excised portion, leaving a small margin of apparently uninvolved mucosa at the greater curvature free. At both cut ends there are wide margins of thin-walled stomach except at the cardiac along the greater curvature, where the incision passes through thickened walls. The surface of the growth is smooth except at one portion, where there is a polyp the size of a cherry. There is no ulceration. The walls throughout the extent of the growth are uniformly thick.

Microscopic examination shows the stomach obviously invaded by carcinoma composed of narrow rows of undifferentiated epithelial cells which show little alveolar arrangement. The growth is largely confined to the mucosa and submucosa and sends slender strands into the muscle. The cells vary greatly. They have many fibroblasts and wandering cells about them. Many of these latter are neutrophilic leucocytes. Occasional small tumor cell clusters occur surrounded by mucus, and some of the cells contain large mucous vacuoles.

The lymph nodes from both the omenta are all invaded by large atypical vacuolated epithelial cells without fibrosis.

Carcinoma with metastases in the regional lymph nodes.

FURTHER DISCUSSION

Exploration showed an incurable condition, but it was decided to do a radical operation. Following this the patient did not come back, and died in two days. Of course the shock of the operation prevents the exhibition of any symptoms which would give us a definite lead as to the question of peritonitis, but it is not necessary to assume that in the face of this operation, as the shock of such an extensive job in itself may well have killed.

I think the point of interest in the necropsy will be the question whether there was anything in the biliary tract that had persisted which might have given the symptoms of catarrhal jaundice which he has had several times. In view of the painful death which he would otherwise have had we can not regret the attempt at relief, even though it failed.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Carcinoma of the stomach with metastases in the regional lymph nodes.
Cachexia.
Polya operation for gastric carcinoma.

DR. EDWARD L. YOUNG'S DIAGNOSIS

Cancer of the stomach.
Operative shock.
Peritonitis?

ANATOMICAL DIAGNOSIS

(Carcinoma of the stomach with metastases in the regional lymph nodes.)
Operation wounds for carcinoma of the stomach.
General fibrinopurulent peritonitis.

DR. RICHARDSON: The examination was limited to the operation field.

The peritoneal cavity contained purulent fluid. The peritoneum generally was coated with purulent exudate, a well marked general fibrinopurulent peritonitis.

A portion of the stomach, about the upper half, was present. The lower end was sutured off. An anastomosis was established with the small intestine. There was no leakage in the region of the anastomosis. The sutures in the region of the stomach wall where it was sutured off seemed a little looser than elsewhere. There were no metastases in the liver. There were a few very slightly enlarged retroperitoneal glands, but microscopically they were negative. Further examination was restricted.

CHILDREN OF TUBERCULOSIS PARENTS

Information obtained from the office of the State Department of Health indicates that infants born of tuberculosis parents have slight chance of escaping death from tuberculosis if they remain in contact with the afflicted parent. Babies do not inherit tuberculosis, but almost all become infected and many of them die if left in continuous contact with their tuberculosis parents. The results would be similar if other tuberculosis patients were closely associated with them in the home. The question is one of exposure to the disease rather than inheritance. The remedy for this condition would be to remove the child from its home at birth unless the tuberculous patient goes to a sanatorium.

This view is in accord with an experience recently reported to the Academy of Medicine in Paris. According to this report 265 children were removed from the homes of their tuberculous parents at or very soon after birth and all escaped tuberculosis. Another group of 171 children remained in the homes with their tuberculous parents until they began to develop tuberculosis before they were removed. Of this number 13 or 7.6 per cent died of tuberculosis. A third group of 66 children born to tuberculous parents were not removed from their homes at all, and 54 or 82 per cent died of tuberculosis, most of them within the first year.

For 37 of the 66 children in the last group, the hygienic conditions of the homes had been studied to find out if this were a factor in the high tuberculosis death rate. Of this number 21 children were in continuous contact with tuberculous parents and all died no matter what the conditions of their homes. In the other 16 instances exposure to the disease was terminated by death of the tuberculous parent, and most of them survived. Thus it appears that continuous exposure to the disease is a more important factor in infants dying of tuberculosis than the hygienic conditions under which they live.

The children removed from the homes of tuberculous parents were normal in weight at birth but suffered the usual disadvantages of artificial feeding which resulted in a higher mortality rate during the first 3 months and a backward physical development up to 18 months of age. After 3 months the mortality rate rapidly dropped to normal and weight was normal or greater than normal at the age of 4.

Thus it appears that the birth of an infant in the home where a tuberculosis patient resides offers choices of procedure vitally affecting the future of the infant. If both the infant and the patient remain in the home, the infant is almost sure to become infected and the outcome will depend largely upon the length of exposure to the disease. If either the infant or patient be removed from the home, the infant will escape infection but will be subjected to the hazards of whatever method of feeding may be chosen. In view of these facts it would seem that an important measure of prevention would be to induce all tuberculosis patients in homes where there are infants or young children to enter a sanatorium where they will not be a danger to the children in their families.—*Bulletin Connecticut Department of Health.*

MIDWIFERY IN MINNESOTA

Our attention has been called by the State Board of Health to a statement which appeared in a book by Dr. S. Josephine Baker (*Child Hygiene,* Harper and Brothers, 1925) that "Minnesota reports that over 75 per cent of its births are cared for by midwives," whereas records of the State Board show that only 6 per cent of births in Minnesota are now attended by midwives and this percentage has been on the decrease for several years.

A survey made in the summer of 1923 by the department of Child Hygiene of the State Board of Health shows the additional fact that of the 166 midwives tabulated outside of the three large cities in Minnesota the majority were elderly and foreign born and were not being replaced y younger material. The midwifery problem in Minnesota is therefore not a serious one and promises to solve itself.

The article by Dr. Adair which appears in this issue of *Minnesota Medicine* (page 586) throws additional light on the midwifery situation in one of the three large cities in Minnesota. He states that in Minneapolis the deliveries by midwives have diminished during the last ten years from 20 to 6 per cent. The condition in the cities is evidently following that in the country districts.

Of equal interest is the fact also brought out by Dr. Adair that the percentage of hospital deliveries in Minneapolis has increased during the past ten years from 25 to 70 per cent. The rest of the state would doubtless show a more or less corresponding increase.—*Minnesota Medicine.*

THE BOSTON
Medical and Surgical Journal
Established in 1828

Published by The Massachusetts Medical Society under the jurisdiction of the following-named committee:

For three years William H. Robey, Jr., M.D.
Roger I. Lee, M.D.
Robert B. Osgood, M.D.
For two years John W. Bartol, M.D.
Horace D. Arnold, M.D.
Channing Frothingham, M.D.
For one year Homer Gage, M.D., *Chairman*
Edward C. Streeter, M.D.
Edward W. Taylor, M.D.

Editorial Staff
David L. Edsall, M.D.
Walter B. Cannon, M.D.
Reid Hunt, M.D.
Francis W. Peabody, M.D.
John P. Sutherland, M.D.
S. Burt Wolbach, M.D.
George R. Minot, M.D.
Frank H. Lahey, M.D.
Stephen Rushmore, M.D.

Walter P. Bowers, M.D., *Managing Editor*

Associate Editors
George G. Smith, M.D.
William B. Breed, M.D.
Joseph Garland, M.D.

Subscription Terms: *$6.00 per year in advance, postage paid for the United States, $7.56 per year for all foreign countries belonging to the Postal Union.*

Material for early publication should be received not later than noon on Saturday. Orders for reprints must be sent to the Journal office, 126 Massachusetts Ave.

The Journal does not hold itself responsible for statements made by any contributor.

Communications should be addressed to The Boston Medical and Surgical Journal, 126 Massachusetts Ave., Boston, Mass.

PUBLIC EDUCATION AND CANCER

The increase of cancer among civilized peoples is an established fact. This increase may be to some degree relative, due to better statistics and greater longevity, but is certainly not entirely so. Every year half a million people die from cancer in the civilized countries of the world.

Such a situation demands action, but unfortunately we know so little about cancer that no definite action striking at the very root of the matter can be taken. Investigations are proceeding in various countries, slowly but surely closing in on the fundamental principles underlying the abnormal growth of cells. The technic of operations for the removal of neoplasms is being perfected; very little more can be expected from this source. The one great outstanding factor which can be influenced is the delay which exists between the appearance of the first symptom and the operation for the removal of the growth.

This doing away with loss of valuable time is the object of all who are trying to decrease the number of cancer victims. The American Society for the Control of Cancer educates the public by means of Cancer Weeks, lectures and pamphlets. Mr. Charles P. Childe, a former president of the British Medical Association, discusses the question very thoroughly in his recently published "Cancer and the Public." In this book, which grew out of "The Control of a Scourge," published in 1906, Childe has one thesis to which he reverts again and again. It is substantially this: in males one third of all cancers are so situated that they can hardly fail to escape detection, and are accessible to treatment; in females, one half of all cases are so situated. The parts so affected are, in males, the mouth, lip, skin, rectum, larynx and testis; in females, the breast, womb, skin, rectum and larynx. The author proceeds to show, from statistics of different clinics, that the percentage of 5 year cures obtained in any of these groups varies inversely with the length of time which elapses between first symptom and operation; the shorter the time, the greater the chance of cure. "If in a disease which is at first local and curable, but is always from its beginning tending to spread and become incurable, when women with cancer of the breast wait 8 months on an average, it is *still* possible to cure 20 per cent of them; when women with cancer of the womb wait 6 months, to cure about 40 per cent of them; when men with cancer of the lip wait 6 months, to cure 72.34 per cent of them; when men with cancer of the tongue wait 4.3 months, to cure 12 per cent of them; when people with cancer of the skin wait 19 months, to cure 59.84 per cent of them; when people with cancer of the rectum wait 5 months, to cure 45 per cent of them; when people with cancer of the larynx (intrinsic) wait 6 to 12 months, to cure 43 per cent of them—what it may be asked would be the percentage of cures if patients did not wait at all?" Childe's position is sound; much good will result from the teaching of this eminently sane doctrine. He would have it taught only to those in the cancer age—from 35 up—and to nurses, midwives and social workers, who come in contact with the poor and ignorant. He points out the beneficial results already obtained as a result of "cancer campaigning."

His book is written for lay readers as well as for the medical profession, therefore he is wise in not going into too great detail. Unfortunately for the strength of his contenton, time is not the only factor in the curability of carcinoma. Recent pathological researches have shown that cancers may be graded according to their malignity; the highly malignant type, characterized by lack of differentiation among the cells and by numerous mitoses, even if operated early, is all too prone to recur. This fact, however, should not deter us from aiding in every way the education of the public as to the importance of having suspicious symptoms investigated, and from being ourselves keenly alert to observe early signs in our patients, and strongly insistent that such signs should be given immediate attention.

A BETTER LAW RELATING TO MASSAGE

Probably the wisdom of more stringent control of the practice of massage is not generally recognized. At present almost any person may secure the right to practice massage by applying to a local board of health, for unless there is reason to suspect the applicant of unworthy purposes the license is granted.

In Boston there are certain restrictions imposed on the licensee. A male operator may not practice on a female and a female operator may not practice on a male. So far as we have learned Boston is the only municipality in this Commonwealth which imposes any restrictions.

These simple regulations seem to be insufficient and it has been brought to the attention of some public spirited citizens that the present law should be amended so that abuses may be corrected. Even well intentioned people may not know the principles of massage and may do harm. The public should know that a licensed masseur is competent and trustworthy. Evidence indicates that the ostensible employment of massage has covered very objectionable practices and the police have been unable in some instances to convict cultists who have attempted to practice medicine under cover of a masseur's license.

A person may apply any of the manipulations of the cults, lead his patients to believe that he is practicing chiropractic, for example, and yet defeat conviction by presenting a masseur's license.

We have been assured that a bill will be drafted which, if enacted, will do away with many objectionable practices.

The medical profession should endorse this movement.

PROMETHEUS UNBOUND

Science seems to be a hardy plant, capable of withstanding summer heat and drouths and winter snows and vernal torrents. Mr. John T. Scopes of Dayton, Tennessee, was recently burned to a crisp by scorn, withered by logic, frozen out by adverse legislation and drowned in a torrent of oratory. Under the circumstances it is interesting to note in *Science* that a scholarship fund of $5,000 is being raised to further the graduate training of Mr. Scopes who enters the University of Chicago this fall, and that a major part of the fund is being donated by non-scientists.

If this is a fair index of the sentiment of the less noisy of our fellow men, a few more Scopes trials should be invaluable in furthering scientific education. We are reminded of the mythological character in Hawthorne's Wonder Tale who rose with seven-fold strength each time he was dashed to earth. It is comforting, sometimes, to reflect that not all men are fools and that we may still retain a considerable portion of our faith in human nature. We hope that Mr. Scopes will attain high rank in his profession and that he will be charitable toward his persecutors, for they knew not what they did.

There is a real danger, however, in anti-scientific legislation, for Truth seems always hidden by the blind spot in man's eye. An example has been set for the passage of anti-vivisection laws; irregular practitioners are gaining their point in many states, and it is becoming increasingly difficult to retain compulsory vaccination, even where it is still practiced. For every one to kindle a light there are ten to extinguish it. It disturbs their sleep.

A BRITISH VIEW OF AMERICAN MEDICINE

Rear Admiral Sir George Lenthal Cheatle, chief surgeon of King's College Hospital, has recently returned to London from the United States, and has issued a statement, according to *The New York Times,* in which he declares that medical and surgical treatment of the highest technical skill is nowhere more effectively practiced than in America.

Sir George Lenthal Cheatle was particularly struck by the manner in which physicians of the "consultant" rather than of the "general practitioner" class are joining themselves into groups whereby more efficient service may be given to the public in all walks of life at the lowest price. "There can be no doubt," he adds, "of its complete success wherever it is available in America."

Sir George's viewpoint is extremely interesting, since in this country, and perhaps more particularly in the East, group practice is still regarded as in the experimental stage and subject to the dangers of certain evils, regardless of its unquestioned merits. Modern medicine can certainly be practiced most effectively by a group system. The degree to which this system can be accepted depends on whether the combination is effected entirely for the benefit of the combining practitioners or for the mutual benefit of patient and physician. Group medicine has by no means been entirely free from the taint of commercialism. Where this factor can be removed and a pooling of resources effected for the sake of efficient and economical service to the patient at a reasonable return to the physician, group practice will attain a respected and useful place in the community.

TRIUMPHS OF PUBLIC HEALTH

An esteemed daily contemporary publishes an account of a lady of Spain who has recently given birth, at the age of 68 to her twenty-ninth child. Coming in this class, almost on the heels of the report of the celebration of his 150th birthday by a pastor of Constantinople, we are forced to marvel at the achievements of modern science. What a couple they would have made!

THE COUNCIL MEETING

On October 7 the Stated Meeting of the Council of the Massachusetts Medical Society was held in the Boston Medical Library. The time usually devoted to the reading of the records was saved by the distribution of reprints of the proceedings of the last meeting. This is a great improvement over the usual custom of reading the records, for councillors may carefully peruse the record and note suggestions for correction, if there should happen to be any, whereas during a reading one might miss some statement.

Early in the meeting the President announced that an invitation had been extended from the Hampden District Society to the Parent Society to hold its next annual meeting in Springfield. Dr. William C. Leary, President of the Hampden District Society, expressed the most cordial wishes of his District to have the Society meet in Springfield, with the assurance that effort would be made to make the meeting successful in every way. The Council voted unanimously and enthusiastically to accept the invitation. The facilities of Springfield and the character of the membership in that section promise one of the most successful meetings of the Society.

The Committee of Arrangements through its Chairman, Dr. John Rock, brought before the Council the question of exhibits and it was voted to have both scientific and commercial exhibits. These features have been profitable in the past and on many occasions disappointment has been expressed because of the omission of these exhibits in recent years. Acting on the suggestion of the President, an associate local committee, consisting of Drs. William C. Leary, Hervey L. Smith and John M. Birnie will function with the Committee of Arrangements.

The last time the Society met in Springfield was in 1855.

The. Committee on Legislation through Dr. Thomas J. O'Brien gave a preliminary report outlining the attitude of the Committee on bills which are to be considered this coming session of the legislature. Full information will be published from time to time relating to bills providing for one standard of practice, the elimination of restrictions relating to appointments to membership on the Board of Registration, and premedical education.

The new section now called Radiology and Physiotherapy will function under the direction of Dr. Lawrie B. Morrison, Chairman, and Dr. Frank B. Granger, Secretary, as provided by vote of the Council. This innovation will be a great help in promulgating scientific knowledge relating to this branch of medicine.

The question of the status of nurse anaesthetists as presented by Dr. A. E. Small did not develop much interest in the problems involved and no action was taken on the motion to place the society on record in affirmation of the proposition that the administration of an anaesthetic is a form of the practice of medicine. It may be that this question is not settled for all time.

The desirability of publishing the results of the study of communicable diseases by Dr. Huber under the direction of the Committee on Public Health was affirmed. The treatise on "Health Examination" by Dr. Joseph Garland will also be published in some form to be determined by the Committee on Scientific Papers and Finance.

Arguments were presented in favor of the recommendations of the American Medical Association that delegates to the House of Delegates should regularly visit the District Societies throughout the State represented by such delegates.

The seventy-fifth anniversary meeting of the Pennsylvania Medical Society then in session called for cordial greetings and congratulations which were expressed in a telegram by Dr. Burrage, the Secretary of the Massachusetts Medical Society, in these words: "Dr. J. Norman Henry, President Medical Society of The State of Pennsylvania, University Club, 7 Front St., Harrisburg, Pa.—The Council of The Massachusetts Medical Society, in stated meeting assembled, sends hearty congratulations of The Massachusetts Medical Society to The Medical Society of The State of Pennsylvania on its 75th anniversary."

The meeting was well attended and the business was transacted with dispatch.

This reference to the meeting is only a brief synopsis of some features with the hope that it may lead to a careful perusal of the Official Records of the Proceedings by the Secretary which will appear soon.

THIS WEEK'S ISSUE

Contains articles by the following named authors:

Joslin, Elliott Proctor, A.B.; M.D., Harvard, 1895. Consulting Physician to the Boston City Hospital. Physician to the New England Deaconess Hospital. Clinical Professor of Medicine Harvard Medical School. Member of the following societies: Society of Clinical Investigation, Association of American Physicians, American Academy of Arts and Science, etc. His subject is "The Reduction of the Death Rate from Diabetes, particularly from Diabetic Coma, in Massachusetts."

Fisher, David, A.B.; M.D., Harvard, 1921. Resident Surgeon National Military Hospital, Milwaukee, 1923-25. Director Surgical Research Laboratory National Military Hospital, Milwaukee, 1923-25. Associated with him is

Mensing, Edmund H., M.D., Northwestern University Medical School of Chicago in 1909.

They write on "Glucose Infusions and Insulin in the Preparation of Poor Surgical Risks."

Van Hook, Weller, M.D., University of Illinois College of Medicine, 1885. Formerly Professor of Surgery at Northwestern University Medical School and member of staff. Member American Medical Association and Chicago Medical Society. His subject is "Contributions to the Surgery of Abdominal Hernia."

Vermooten, Vincent, B.A., A.M.; M.D., Johns Hopkins, 1923. Formerly Demonstrator of Anatomy, University of Cape Town and House Officer Johns Hopkins Hospital. Now Assistant in Surgery Yale University Medical School. His subject is "Appendiceal Lithiasis."

Barber, Daniel N., M.D., Harvard, 1923. Formerly House Officer Hartford (Conn.) Hospital. Associated with him is

Miller, James R., F.A.C.S., A.B., Johns Hopkins, 1911. F.A.C.S., Assistant Gynecologist Hartford Hospital. Formerly Assistant in Clinical Obstetrics Johns Hopkins Medical School. They write on "Acute Appendicitis During Labor; Operation-Recovery."

Morse, John L., A.B.; M.D., Harvard, 1891. Professor of Pediatrics Emeritus Harvard Medical School. Consulting Physician at The Children's Hospital, The Infants' Hospital and Floating Hospital, Boston. His subject is "Relation of Clean Milk to Progress in Infant Feeding."

Holmes, Arthur D., B.S.; Ph.D.; Formerly Laboratory Assistant Dartmouth College, Instructor of Chemistry University of Maine, Instructor of Chemistry Massachusetts Agricultural College, Research Chemist United States Department of Agriculture, etc. Now Director of Research E. L. Patch Company. Associated with him is

Pigott, Madeleine I., B.S., Tufts College. Formerly Department of Chemistry Harvard Medical School. They write on "Studies of the Vitamin Potency of Cod Liver Oils. XVII—The Vitamin Potency of Salmon Body Oil."

Cates, Benjamin B., A.B.; M.D., University of Pennsylvania, 1888. Formerly instructor Tennessee Medical College. Consulting Surgeon Knoxville General Hospital. His subject is "Special Periostetomes for Cleft-Palate Work."

Bonner, Clarence A., M.D., University of Vermont Medical School. Formerly Assistant Physician and Assistant Superintendent Worcester State Hospital. Now Chief Executive Officer Boston Psychopathic Hospital. Member of American Psychiatric Association. His subject is "Mental Wounds."

The Massachusetts Medical Society

MEMBERSHIP CHANGES

Dr. Otis F. Kelly has moved from Danvers (Essex South) to Brighton (Middlesex South), where he is at St. John's Seminary.

Dr. Donald B. Cheetham has moved from the Worcester State Hospital to South Barre, Mass. His address is 21 Vernon Ave.

Dr. Elmer H. Heath, Jr., has moved from the Massachusetts General Hospital, Boston (Suffolk), to the Johns Hopkins Hospital, Baltimore, Md. (Non-Resident List).

Dr. William T. Patch has moved from Roxbury (Norfolk) to Newton Center (Middlesex South). His office is Boston, 144 Commonwealth Ave.

MISCELLANY

A TRIBUTE TO DR. VICTOR SAFFORD

Radio Review, by Harry Noyes Pratt on "Immigration Problems," by Victor Safford, Published by Dodd, Mead & Co.

Dr. Victor Safford is an officer in the immigration service, entering into the work at Ellis Island thirty years ago. For a quarter of a century he has been influential in building up and making more effective the regulations governing the admittance of aliens to this country. This recent volume from the press of Dodd, Mead & Co., Immigration Problems, is made up of a series of very readable personal reminiscenses covering Dr. Safford's experiences in the service. They run all the way from humor to tragedy, and in their reading one gets not only a picture of the problems confronting the immigration officials, but also the problems of the immigrants themselves. He graphically pictures the efforts made to over-ride the decisions of the officials and to secure the admissions of excluded persons. To quote one instance given:

"An arriving alien, a boy about seventeen, was found to be an imbecile and so certified by the medical officers and excluded . . . by a Board of Special Inquiry . . . there is no legal provision (in cases of this kind) for an appeal to the Secretary of the Department. After employing lawyers, delaying deportation and fighting for over a month to get the boy admitted, the boy's uncle . . . came to me and stated he had seen enough of the boy to know that we knew what we were about when we called him an imbecile and also had come to realize better what assuming the custody of an imbecile really meant. He had therefore decided to give up the fight, let the boy return and try to arrange for the boy's care back home . . . He had already spent over $1,000 for legal services in the case. Another relative, however, stepped in and continued the fight and, if my memory serves me correctly, finally secured an order from the Secretary of the Department directing the local immigration officials to release the imbecile."

Dr. Safford's experiences illustrate how great a part the influence of members of congress and other government officials has played—in the past if not today—in the administration of our immigration laws. The whole volume, in fact, gives a view "back stage" which is keenly interesting. Not so heavy a book as its title indicates.

GOLDEN RULE SUNDAY, DECEMBER SIXTH

Dr. Wendell Phillips, President of the American Medical Association, has accepted the chairmanship of the Golden Rule Sunday Co-operating Committee as the representative of the medical profession. The object of the committee is to promote international good-will and to focus attention on the needs of the war orphans of the Near East.

Golden Rule Sunday falls this year on December sixth. On this day you are asked to eat a humble meal of bread and stew such as the homeless children under American care in the Near East eat every day in the year. Then make as adequate provision for them as you would like to have made for yourself if conditions were reversed, remembering: "Whatsoever ye would that men should do unto you, do ye even so unto them."

Aside from caring for the war orphans of the Levant, Dr. Phillips calls attention to the great medical work that the Near East Relief has initiated, especially in Greece, where the necessity for stamping out malaria among the orphans had led to wider service to the entire community. The most notable illustrations of this are to be found in Macedonia and the ancient city of Corinth, where malaria has been reduced as a result of an organized campaign conducted under the direction of Near East Relief doctors and nurses. The complete absence of typhus, where last year there was an epidemic carrying off large numbers of victims, is largely attributed to the precautionary measures taken in connection with the institutional work of the Near East Relief, co-operating with governmental agencies.

The "K" Fund, provided by one of the many friends of Near East Relief, has, during the past year, enabled the organization to reach outside of the orphanages and give elementary medical care in the refugee camps and villages about Salonica, the great refugee port of Greece.

Another important development of the medical work in the Near East, where there is a notable dearth of trained nurses, has been the organization of a nurses' training school in Athens and Alexandropol, the metropolis of Russian Armenia, where the older orphan girls are given training as nurses.

December sixth marks the third annual observance of Golden Rule Sunday. Last year the appeal sent forth to aid 50,000 war orphans under American care in the Near East. Today there are about 35,000 needing aid, the other 15,000 having either been adopted by families or graduated into industry. Of those who remain 80% are less than 14 years of age, so such a drastic cut will not be possible next year. It will probably take at least four or five years more before the task is completed.

Orphanage centers are now located in Syria, Palestine, Greece, and Russian Armenia. 115 Americans direct the work assisted by native personnel. Industrial training is a part of the educational program in all orphanages for the children must be ready for self-support by the time they are fifteen or sixteen years of age.

NEW HOSPITAL FOR NEW YORK

The first private general hospital to be erected in New York on the West Side, with radio in every suite, specially designed stainless-steel furniture, a solarium, open air sun-garden and the latest operating and special treatment rooms, will immediately be built on the south side of 76th Street just east of Amsterdam Avenue. The entire building is to be odor and noise-proof and the furnishings and decorations will express an entirely new note in that they will combine the atmosphere of the tasteful, modern home and all that is known regarding sanitary furnishings.

There are about twenty-five practitioners and specialists of medicine and surgery intimately interested in the project, but the building, its equipment and service are to be at the disposal of the entire profession.

It will be opened about May 1, 1926. The operating and X-ray rooms, the Solarium and open air sun roof have been designed to give patients every exclusive benefit and luxury.

The building will be eight stories, steel frame, absolutely fire and noise-proof. There will be sixty suites, with a capacity for seventy-eight patients. Only contagious diseases will be excluded. The property fronts forty feet on the south side of 76th Street with a depth of one hundred and two feet.

HEALTH WORK HANDICAPPED BY INADEQUATE REPORTS OF DISEASES

"For a number of years, the Federal Government through its agency, the Public Health Service, has insisted on obtaining from State and local health authorities, reports of communicable diseases, with very little share in the expense of collecting this data," said Surgeon General Cumming in an interview today.

"State health officers are demanding better reports of preventable diseases. At the last conference of the State health officers with the Surgeon General, they proposed and unanimously adopted a resolution, asking that the Surgeon General take steps to create a registration area for morbidity reports comparable to the registration areas of the Census Bureau for births and deaths.

"The number of insane and feeble minded, many of whom are in this condition as a result of preventable diseases, is constantly increasing and adding to the burdens of the taxpayer.

"During the calendar year 1922, the last for which data are available, there were 78,070 persons cared for in alms houses and 348,928 in homes, day nurseries and similar institutions. In addition to these, there were in hospitals and other institutions for the care of the insane and feeble minded and epileptics a total of 348,174 persons. Records show that more than 400,000 persons go out from our State and Federal penitentiaries annually; many of those of our dependent classes as well as many of those in penal institutions are suffering from preventable diseases which in some measure are factors in their dependency or delinquency.

"For several years past, an effort has been made to obtain appropriations for improving the accuracy and completeness of reports of diseases of man but without success. An estimate of $4,000.00 for this work was approved by the Bureau of the Budget for the fiscal year 1925, but this appropriation was not approved by Congress. A like estimate was submitted for 1926 but this also failed.

"The last Congress ratified an international Pan-American sanitary code or treaty approved by the President, providing that each signatory power thereto, shall collect and publish statistics of communicable and preventable diseases, and this treaty has already been ratified by a number of Latin American republics and it is believed will soon be ratified by practically all of them.

"It is of the utmost importance," said Surgeon General Cumming, "that provision be made for the better collection of morbidity statistics, including those diseases which play such an important part in the production of insanity and feeble mindedness."—*United States Public Health Service.*

NATIONAL BOARD OF MEDICAL EXAMINERS

The National Board of Medical Examiners has announced this week that two additional states, Connecticut and Utah, have notified the Board that henceforth they will accept its certificate qualifying physicians to practice medicine in those states. The certificate of the Board is now recognized in more than 30 states, and in Great Britain.

The Board also announces that at the June examination, held at 30 medical schools throughout the country, a total of 508 was examined, the largest number ever to take the written examination of the Board.

Of the 334 candidates who took either the complete examination in Part I (which covers the first two years in medicine) in June, or completed Part I by taking subjects previously postponed, Ralph Lichtenstein of Philadelphia, who obtained his medical education at the Jefferson Medical College, Philadelphia, earned the highest number of credits, securing 394 out of a possible 435. Euclid P. Ghee, of Jersey City, who is a member of the class of 1927 of the Harvard University Medical School, stood second with 392.3 credits.

THE DUTY OF THE FAMILY PHYSICIAN

BY D. E. SULLIVAN, M.D.

Secretary, New Hampshire Medical Society,
Member Gorgas Memorial Institute

For many years there has been a well organized system in the United States to protect public health—that is the health and lives of citizens as a mass formation. Thereby have been accomplished definite results in some instances, notably the practical elimination of typhoid fever as a menace and the protection of school children through medical supervision and the application of preventive measures.

In the meantime, however, the individual has received scant attention and only during a more recent period have his particular requirements claimed the attention of the medical profession. While the need of regular periodic physical examinations is now recognized and advocated by all progressive physicians and has been officially urged by the American Medical Association through the House of Delegates, it does not require very close observation to note the indifference of our fellow practitioners to the call.

State and County societies have evidenced coöperation with the central organization by the adoption of resolutions, naming special committees to carry on the work and devoting space on their programs to its consideration but what, so far, has been the response of the vast majority of the members? Very few of them have heartily recommended it to their families or given the subject anything more than a passing consideration.

The opportunity is ripe to confine such an important matter to the ranks of family physicians and wrest it from exploitation by commercial institutes. But this will not be accomplished, unless we display more personal, active interest in getting the message to the people. We need to be coöperative, "to push" the splendid educational work of the Gorgas Memorial Institute, now under way in the newspapers of our country.

While the more urgent application of the necessity of this work may be of greater vital interest to men and women of mid-life, no age or class is exempt.

A careful scrutiny of a babe may disclose conditions or apparent tendencies of disease which, recognized in season, will result in a sound mind in a sound body instead of a crippled limb or arrested mental development.

The growing child will record defects of eyesight or hearing unrecognized by the parents and by properly applied remedies saved from a life of dependency and so on through the several decades until its greatest worth is found after middle life. It is our duty to be the leaders in this movement, to enter upon it with well equipped and united ranks, to give proper publicity of its necessity to the people and devote full and sufficient time to every examination.

Too long has the mind of the medical man been focused on *disease* principally. Let him now devote special attention to the *presumably well.* The average person cannot be expected to recognize the indications of developing, harmful symptoms of disease. Let our profession resolve to contribute to human progress the best of its resources.—*From Gorgas Memorial Institute.*

UNITED STATES PUBLIC HEALTH SERVICE

Health Conditions Generally Satisfactory, Says Surgeon General Cumming

"Health conditions in the United States have been generally good, so far, this year," said Surgeon General Cumming of the United States Public Health Service in an interview today.

"Preliminary figures indicate that the death rate of the United States for the first seven months of 1925 will be lower than the average for the last five years in spite of the fact that the rate for the month of June was considerably higher than the usual rate for that month. This was probably due in some measure," said the Surgeon General, "to the 'heat waves' which prevailed over a large part of the United States.

"Reports from State and city health officers indicate that most of the more common communicable diseases have been less destructive than usual this summer.

For eight weeks since the first of July, the States which report regularly to the United States Public Health Service have recorded approximately 6400 cases of diphtheria. Last year for the corresponding period, these same States reported nearly 8100 cases, a decrease for the period of 20 per cent. During the same period of time, reports of measles indicated a decrease from last year of 27 per cent while scarlet fever decreased 14 per cent.

"During the spring and summer months, the prevalence of infantile paralysis usually increases. This year the increase in some parts of the country has been marked.

"Thirty-two States reported 1463 cases of infantile paralysis for eight weeks this summer and 635 cases last year for the same period. This increase is not uniformly distributed. It is particularly noticeable in California, Minnesota, Missouri, New Jersey, North Dakota, South Carolina, and Wisconsin. With the coming of cooler fall weather the danger from this disease diminishes.

"For many years the incidence of typhoid fever has been decreasing in the United States. The general death rate per 100,000 population in the registration area dropped from 35.9 in 1900 to 6.8 in 1923. This year, however, there seems to have been a slight reaction. Since the first of July, 33 States have reported 7173 cases of this disease, which may be compared with 5013 cases last year, an increase of 43 per cent. Some of this apparent increase, however, may be due to more nearly complete reporting of cases.

"The ports of Oakland and San Pedro, California and New Orleans, Louisiana, have been declared free from plague and outgoing quarantine measures have been discontinued. The Mexican authorities upon information tendered by the Public Health Service have agreed to the discontinuance of the disinfection of mails from Los Angeles, California and also to the suspension of the fumigation of freight trains from that city except in cases in which the Public Health Service deems this measure necessary.

"Because of the absence of yellow fever from Mexican, Central and South American ports and the very low incidence of this disease even in countries where it is present, there has been no "close quarantine" this year on account of yellow fever, which means, of course, that there has been no detention of passengers. The absence of yellow fever in Latin American countries is unquestionably due to the relentless campaigns which have been carried on against the yellow fever mosquito."

In concluding, the Surgeon General expressed the hope that the authorities of those countries where yellow fever infection still remains at the present time will continue the work of extermination until quarantine authorities will no longer have to consider measures against this disease.

NURSING STANDARDS

When the American Red Cross undertook the development of public health nursing one of the first steps was the establishment of certain minimum qualifications with respect to the training and experience in public health nursing to be required of all nurses assigned public health nursing positions in Red Cross Chapters. Adherence to this standard was not unattended by criticism. Chapters awakened to the need for public health nursing, keen to get under way and delayed by the necessity of waiting for a qualified nurse, often felt these professional requirements to be unnecessarily high. Nor were the Chapters alone in their censure. Six or seven years ago there were many state and county health officers who thought the Red Cross standard excessive.

In the intervening years, however, the nurse with proper preparation has so adequately demonstrated her advantage over the unprepared nurse that both Chapters and public authorities alike are now convinced that instruction and experience in public health nursing are prerequisites. As one result, minimum standards have been written into the laws of a number of states. In some instances these standards have been those of the American Red Cross. In other instances they have been even higher.—*The Red Cross Courier.*

SECOND HEALTH UNIT OF GEORGE R. WHITE FUND STARTED

Photo shows the laying of the cornerstone of the new health unit at Paris and Emmons Sts., Boston, by trustees of the George Robert White Fund, and the 2d unit in 9 months to be started. Mr. White, deceased, created the fund that the people of Boston may have free advice and care from these health centers. The first unit has made such a success that medical experts have written, and come from all parts of the world to learn the method and procedure of the first health unit.

SECOND HEALTH UNIT OF GEORGE R. WHITE FUND STARTED.

THE DANGER OF LIGHTNING

Dr. Arthur W. Gilbert, Massachusetts Commissioner of Agriculture, has estimated the chance of death by lightning, which is only one in more than a million.

During a five-year period nineteen persons were killed by lightning in Massachusetts, an average of 3.8 per year.

The man on the farm is more than ten times as likely to be struck by lightning as the man in the city. Steel framed buildings and trolley wires relieve the electrical tension. Dr. Gilbert believes that lightning rods are of value in protecting farm buildings.

The city man, however, is twenty thousand times more liable to deaths caused by automobiles than his brother on the farm. Lightning is merciful as compared with the automobile.

THE EXAMINATIONS BY THE NATIONAL BOARD OF MEDICAL EXAMINERS

The certificate of the National Board is now recognized by thirty-five licensing boards including those of thirty-three states, Porto Rico and the Canal Zone. Only ten were admitted to examination in 1916. In 1924 nine hundred and seventy-eight candidates were examined. Connecticut now permits the examining board to accept the credentials of the National Board without further examination.

CHILD HEALTH SURVEY

The American Child Health Association has recently submitted its final report on a health survey of 86 cities. Each of these cities was found to be carrying on some organized effort for bettering the health of children, although the amount on the average is but one half of what might be expected in a reasonable program.

The greatest needs were found to be well trained health officers giving undivided attention to the task, standardization of method, more thought in explaining health work to the public, and better team work among public and private health agencies.

COFFEE DRINKING

Coffee drinking has been made the subject of a scientific investigation by the Mellon Institute of Industrial Research of the University of Pittsburgh, and the results have recently been released. Two important objections to the use of coffee among children seem to be its undesirable and unnecessary stimulative effect and its liability to be substituted for milk. The aged were also found to become more sensitive to caffein than those of fewer years.

CORRESPONDENCE

SUMMER COGITATIONS

Dear Mr. Editor:

In a moment of midsummer madness you ask for my summer cogitations. "Cogitation" means thinking, doesn't it? Is thought stimulated on a little rocky point in Penobscot Bay, basking in sun and wind, with the sea below, the sky above, and the everlasting hills across the water? On a rainy day, however, temptation to avoid thought is less insistent, and here are a few cogitations, such as they are, and if such you please to dignify them.

Incidentally, why is Maine the only State commonly spoken of as the "State of Maine"? Is it to mark its setting apart from Massachusetts a century ago?

It happens that these past summers I have had contacts with three neighbor medicos, contacts close enough to make me wish them closer and more frequent. One, a graduate of a leading medical school, did general practice until surgery swallowed him up. He does the surgery of a large area, and would be a good surgeon anywhere. The other two are graduates of minor schools, and lacked earlier advantages, save necessity and enthusiasm. Are there any greater?

One began his medical study in a horse stall in odd moments snatched from stable duties. He is now an overworked general practitioner, doing well a large amount and variety of surgery, major as well as minor, in a well appointed hospital. He spends at least a month every winter in New York "brain-dusting." The third presides over a small settlement, beginning practice in a remote lumber camp where he did his best to meet everything which came along, from unconscious psychotherapy through surgery to smallpox and diphtheria. To any one of these men I would entrust myself, knowing that he would do well by me and refrain from doing anything which another within reach could do better. I have reason to believe that I have other similar medical neighbors—anybody within twenty miles is a neighbor—but speak here only of those whom I know well.

In the city we select our adviser or advisers, partitioning our bodies. If we do this wisely we do well. I have long felt and often said that most of us city doctors are lame ducks. Use may develop a single leg into a superleg, but, by and large, two good legs are better. A concentrated crystallizes quicker than a dilute solution. As the city doctor gets into middle life he is apt to see a deal of some things, very little of many others. He must read widely and seek contact with others, non-medical as well as medical. Were I called upon to lay out a course for a life devoted to medicine, I should be tempted to crown the best procurable preliminary and professional training with a year or two in a lumber camp—if you like—isolation, scant outward resources, the necessity of doing, unaided, the best thing possible at the time. Then let him gradually specialize, if he will. Neither he nor his patients will suffer from his hard apprenticeship. Utopia, yes. I am only cogitating —in the summer.

"Lives of great men all remind us"—I have lived with three this summer, Huxley, Osler and Acland. Such very different men! But with the common factor of an intense and varied life devoted to humanity. The early training of Huxley and Osler may be fairly classed as meagre. Both died at seventy, Huxley in '95, Osler in 1920. Osler had no such grilling as had Huxley, when, after qualifying in medicine, he entered the Navy and was four years on the Rattlesnake, mostly off the New Guinea Coast in Torres Strait, pursuing science under conditions which would have daunted most men. The "moderate"—as we say down East—man must have conditions met before he can move. The big man's faith moves mountains and forces conditions,—Harvey, Faraday, Claude Bernard, Pasteur, for instance. In later life Huxley highly valued these hard years. A hater of shams, he must expose what he believed to be such. A singularly clear thinker and expositor, he was a doughty knight of science at a time when she needed a champion. One may question whether he did not expend undue energy and time in controversy, but we must remember that he was himself and a man of his time.

Evolution is a body blow to the literal interpretation of the Biblical story of creation. Fundamentalism in 1860 was well nigh universal in Christendom. Evolution was shocking and subversive. It was not in Huxley's nature to shun controversy, and he probably did more than any other one man to support evolution, to him the pivot of free thought based on evidence. Huxley and Osler alike were very conversant with the Bible, and alike admirers of it as literature. Osler was content to let it rest at that, amused, rather than distressed, by its obsolete biology and geology. Osler never would have fought the battle which Huxley had done so much to win before Osler's maturity.

Huxley gave the opening address at the Johns Hopkins University in 1876. Dr. Acland, Regius Professor of Medicine at Oxford, later Sir Henry W., was consulted by Dr. John S. Billings about the plans of the Johns Hopkins Hospital. Educated at Harrow and Oxford, his early training is contrasted with that of Huxley and Osler. He was a man of keen and restless intellect. A lady whom I well knew spoke of him as "having more feelers out than almost anyone she had ever met." His services to science and medicine are, I fear, little known in this country. When appointed Regius Professor in 1857, science was held in little esteem in Oxford, medicine in none. In addition to his broad and well trained mind, to his character and personal charm, he had the prestige of membership in one of the oldest and best English families with the contacts it rendered possible, no small asset in those days at least. These advantages in combination enabled him to win a hard fight at Oxford, the winning of which probably went far to make the Regius Professorship acceptable to Burdon Sanderson, and, later, to Osler. Acland and Huxley were as one in their zeal for science. Their theological views differed widely but there seems to have been no real clash between the men. Huxley writes to a friend,—"I like what I have seen of Acland. He seemed to have both intelligence and volition." Acland, in letters to Gladstone, delicately urges him to keep his hands off science, and in one he says,—"But I would say to any friend, Don't argue with Huxley or people of that kind at all." He doubtless wished that Huxley would keep his hands off religion. Others may have forgotten, as did I, that Huxley first used the term "agnostic." The atheist and the fundamentalist were alike anathema to him, alike priests of Baal, devoid of the spirit of truth vivified by reason weighing evidence.

They were all humanists. They fought for humanity at different times and with somewhat different weapons and methods. To all we are deeply indebted.

I am tempted to touch on Huxley's views on medical education. In a letter to Professor Ray Lankester in 1892 he says,—

> "The mediaeval university looked backwards: . . . .
>
> "The modern university looks forward, and is a factory of new knowledge: its professors have to be at the top of the wave of progress. Research and criticism must be the breath of their nostrils; laboratory work the main business of the scientific student; books his main helpers.
>
> "The lecture, however, in the hands of an able man will still have the utmost importance in stimulating and giving facts and principles their proper relative prominence."
>
> * * * * * * *
>
> "Our side has been too apt to look upon medical schools as feeders for Science. They have been so, but to their detriment as medical schools. And now that so many opportunities for purely scientific training are afforded, there is no reason they should remain so.
>
> "The problem of the Medical University is to make an average man into a good practical doctor before he is twenty-two, and with not more expense than can be afforded by the class from which doctors are recruited, or than will be rewarded by the prospect of an income of £400 to £500 a year.
>
> "It is not right to sacrifice such men, and the public on whom they practise, for the prospect of making 1 per cent of medical students into men of science."

Note the date, 1892; that he has British medical education in mind; that even today an A.B. degree or its equivalent is not required in England as a door to the study of medicine. An income of £400 or £500 a year in England in '92 did not differ I suppose very greatly from the average income of our practitioners at that date. Today, a third of a century later, Huxley probably would have expressed himself differently.

In an undated draft in his own handwriting, probably 1892, he says,—

> "The modern knows that the only source of real knowledge lies in the application of scientific methods of inquiry to the ascertainment of the facts of existence; that the ascertainable is infinitely greater than the ascertained, and that the chief business of the teacher is not so much to make scholars as to train pioneers."

Huxley called a class of modern poetry "sensuous caterwauling." It seems to me that today one might venture to label some of the poetry—Heaven save the mark!—and fiction of late years as mental masturbation.

Cushing's Osler, Huxley's Life and Letters, Lay Sermons and Addresses, etc., and Atlay's Life of Acland are good medicine for any medico anywhere, at any season. The former will take care of itself. I hope that some of your readers may find the two latter as salutary and palatable as has

Yours Sincerely,
F. C. Shattuck.

P. S. Since writing the above I have read with admiration a letter addressed, in 1879, to the Trustees of the Johns Hopkins University during Acland's second visit to the United States. His first visit to this country was in 1860 as Physician to the Prince of Wales. He was deeply interested in the Johns Hopkins as a new departure in medical and university education, and was asked by the Trustees to give his impressions in an address at the opening of the session of '79. Indisposition prevented, and, at the request of the Trustees, he wrote this thirteen page 8vo. letter, printed in pamphlet form by the Trustees. It must be very rare, only two copies in the Johns Hopkins libraries. I hope it may be reprinted. It is replete with knowledge and wisdom, serviceable today, nearly half a century after its birth, to all directors of medical education.

REPORTING ATTENDANCE BY CHRISTIAN SCIENCE PRACTITIONERS

September 10, 1925.

Editor, Boston Medical and Surgical Journal:

I note with marked interest the article having to do with the attitude of the management of the *Christian*(?) *Science*(?) *Monitor*—the word monitor means to warn—so this journal would seem to be doing just the opposite in the matter of smallpox—since it encourages the spread of such disease!

However, the same is true toward pathology in general—with possibly the exceptions met with in cases of fractures and dislocations; hepatic and renal colic, and such conditions as are characterized by severe pain. Very recently the writer was summoned to see a woman suffering from the pain associated with an acute attack of gastro-intestinal toxaemia, with marked distension. On her pillow lay an open copy of the Eddy Bible which the victim had been hastily perusing in her search for such paragraph as might cover the condition in question! It should be made incumbent upon all medical men, when filing death reports in cases where Christian Science practitioners have been in attendance, to specify as contributing cause the pseudo-science in question.

Fraternally yours,
JAMES BROWN THORNTON.

P. S. Vis medicatrix naturae is a terra incognita to the ignis fatuus of the Eddy Cult.

A DISCLAIMER

City of Columbus, Ohio
Board of Health

September 25, 1925.

Editor, Boston Medical and Surgical Journal:

After receiving a clipping of the JOURNAL from Dr. Baldwin and later a copy of the same issue of the JOURNAL, it seems as if a statement ought to be made.

No letters came to me from Dr. Woodward. Certainly no statement has been made by me that smallpox is a minor disease here. Smallpox has continued to thrive here and elsewhere among unvaccinated persons.

Columbus had 26	cases	in 1919	with	one	death	
70	"	" 1920	"	no	"	
273	"	" 1921	"	"	"	
15	"	" 1922	"	"	"	
81	"	" 1923	"	"	"	
134	"	" 1924	"	"	"	
246	"	" 1925	"	"	"	to date

We have had to do more work to keep this disease in check than anyone unfamiliar with smallpox can realize. Massachusetts ought to be proud of the situation as it exists there.

In our attempt to have all school children and industrial workers vaccinated about a year ago we found that lack of State authority limited our power in this particular field. In supporting the school physicians in their campaign to have all school children vaccinated the anti-vaccinationists filed charges of malfeasance in office against us and in their meetings held from time to time plans of "getting" the Health Officer were freely and openly discussed. It was a little satisfaction to have two members of the anti society develop smallpox of a severe but not fatal form.

I hope Ohio and other States may some day have as little smallpox as Massachusetts has and we will have only when a similar law is adopted making vaccination compulsory.

Very truly,
JAMES A. BEER, M.D.,
Health Commissioner.

NOTE:—Letters were mailed by me to the health officers of five cities. Four replied. A second letter was then mailed to Columbus, calling attention to the first communication. Neither of these letters came back to me as they should have done if undeliverable. I am pleased to know that Dr. Beer did not make the statement attributed to him. I never supposed that he did.

SAMUEL B. WOODWARD.

SMALLPOX IN AUSTRALIA

Mr. Editor:

The *Christian Science Monitor* and Mr. H. D Nunn, General Counsel of the Medical Liberty League, Inc. (not the American Medical Liberty League, please), can between them provide instruction, amusement and occupation for one much younger, more agile and less busy than the writer of this letter. Having discovered that there is little or no smallpox in the United States—despite reports of thousands of cases each and every year, epidemics in Wisconsin, Minnesota, Missouri and other States, 40 cases in Los Angeles "not considered unusual." the statement of the *Health Bulletin of the League of Nations* that we had in 1924 "more than any other country" in the civilized world, etc., etc.—both, one possibly incited by the other, have recently joyfully asked why Queensland, unvaccinated as it confessedly is, has so little smallpox to report.

Knowing that there must be a reason and being an earnest seeker for the truth no matter who is hit, I sent a circular letter to the health authorities of distant Australia, and, having received replies from the Secretaries of the Health Boards of Victoria, New South Wales and Queensland, beg you for a little space to make clear the attitude of Sydney, Brisbane and Melbourne on smallpox, vaccination and similar afflictions.

The *C. S. M.* in an editorial some months since called on those who advocated this medical procedure (vaccination) to make such statistics as it presented as public as the figures which "they are so fond of forcing upon the people's notice." The statistics were that "in the whole 134 years of Australian history not one-fifth of the children born have been subjected to vaccination," that specifically "Queensland is to all intents and purposes a totally unvaccinated State" and that "it is said that it has only experienced one 'epidemic' and that was in 1892, when a well vaccinated quarantine official came down with the disease on shipboard." These are not what are usually called statistics, but let that pass.

Mr. Nunn finds in the "United States Public Health Service Report for August 14, 1925," that between "1909-1923 60 vessels arrived at Australian ports with smallpox cases on board and 40 more which had either discharged passengers with smallpox at overseas ports, buried at sea persons who had passed on of smallpox, had smallpox developed en route between domestic ports, or been quarantined on suspicion of having smallpox on board." From this he concludes that "all that could have saved Australia from such a situation would have been rigidly enforced vaccination and revaccination, but that New South Wales had but 2,400 cases, Victoria 9, Queensland 5. South Australia 1, West Australia 7, Tasmania 0." (Says he) "There was no lack of opportunity for smallpox to gain a footing, there was no vaccination worth mentioning, yet Australia was during the period under consideration probably the freest from smallpox of all the countries of the world."

Passing over the quarantine officer who was so thoroughly vaccinated that he came down with smallpox, even though his contemporaries were not and did not, and confessing that I know nothing about Australian smallpox before 1857, when the ship "Commodore Perry" was responsible for 16 cases and 4 deaths, I wish to say that it is true that Australia is a very imperfectly vaccinated country. It is true that the smallpox incidence is in general extremely low. It is even true that despite the unvaccinated population smallpox has never gotten the hold in Australia that it has in the United States and that there is practically at the present day no smallpox there. It is also true that Australia is an island—a large island to be sure, but still an island. It is true that if there is no smallpox in an island it can only reach it by ship or airplane; wireless and radio transportation being as yet inefficient. It is true that if quarantine is effective, all suspects and contacts vaccinated in an island, whose nearest neighbors are far enough away for the incubation period of smallpox to almost invariably pass before those embarking from foreign ports reach the health officers of its quarantine stations. It is true, I say, that such an island, so protected, can defy smallpox despite its generally unvaccinated population. Australia lives in a glass house, but it is safe so long as its walls hold. That they do not always suffice is shown by Mr. Nunn's own figures for New South Wales, 2,400 cases since 1909, 1,073 of them in one year. Twenty-four hundred cases is, man for man, 24 times as many as Massachusetts accumulated during the same period. Massachusetts, surrounded by smallpox, is not an island, is unquarantined against its neighbors.

That quarantine of [illegible] unvaccinated population is not enough was shown in [illegible], when the "Commodore Perry" was responsible for 16 cases and 4 deaths; in 1866-1868 and 1869, when the "Tornado" and the "Avondale" fathered 48 cases and 10 deaths; in 1872, when from the "Nebraska" came 10 cases and 3 deaths, all in one family. Smallpox existed in Melbourne from April, 1884, to April, 1885—source attributed to the ship "Rome," but evidence inconclusive—56 cases and 6 deaths. In 1895 the "Clen Curry" and in 1903 the "Graccus" made trouble. In 1914, with an epidemic in Sydney, Melbourne escaped, and it has had no reported case since 1921, when there were 11, attributed, perhaps doubtfully, to the ship "Graccus."

Does anyone suppose that in the presence of smallpox on these and other occasions vaccination was not at once resorted to, or that the actions of the Australian health officers differ from those of similar officials in other countries?

Mr. Nunn and the *C. S. M.* conclude that the Australian facts "lead inevitably to the conclusion that a reasonably well-nourished, clean-living community has little reason to be apprehensive of smallpox after discarding the practice of vaccination."

Australia is far from discarding the practice of vaccination. Australia is alert and resorts to vaccination on the first sign of the appearance of smallpox. What says T. H. Neely, Secretary of the Director-General of Public Health of New South Wales? "The major portion of the population is not protected by vaccination. Whenever smallpox occurs, vaccination depots are opened. Both *interstate* and *intrastate* travellers have been compelled to produce a certificate of successful vaccination or of having been vaccinated within recent years." ' Did we ever do anything as drastic here? "Contacts of cases are quarantined for 18 days unless they undergo or produc evidence of successful vaccination." "In short, vaccination is the main line of defense in controlling the disease." "Immigration is controlled by the Commonwealth Government. Very careful attention is paid to the possibility of introducing smallpox, particularly from the East." "As most shipping routes to Australia, except from certain parts of the East, require a period of travel longer than or closely approximating to the incubation period of the disease, we are in a position to discover in most cases any evidence of the disease." "Rigid maritime quarantine is enforced whenever necessary and vaccination utilized as mentioned in connection with contacts in this State." R. H. Marsh, Acting Secretary in Brisbane, speaking for Queensland, says that vaccination is provided for in the Queensland Health Acts, but has to be proclaimed in force by the Governor and Council, which is only done when a smallpox scare occurs, and this is seldom. In 1913 when there was smallpox in Sydney some 30,000 people were vaccinated, a mere handful, the population being 834,894. The Commissioner thinks conditions very unsatisfactory with smallpox all the year found in the East and but a week from their seaboard. In Victoria in 1913 again about 40 per cent. of the population were vaccinated, also all soldiers who served in the Australian Imperial Forces, so that the Commissioner in Melbourne thinks that a large proportion of the adult population is protected.

Vaccination of all contacts has fairly well protected Australia thus far. Vaccination of all contacts has ended eventually every epidemic in this as well as in other countries.

Queensland is brought forward as the shining example of the benefits of not being vaccinated. Queensland in 1914, with an epidemic in Sydney, 400 miles from her nearest boundary, proclaimed that city as a quarantined area, public vaccination depots were established in the principal centers, the Epidemic Disease Regulations were made applicable to the whole State, the public freely availed themselves of vaccination, the depots were rushed and at times the crowds awaiting vaccination became so unwieldy that the services of the police had to be requisitioned, the staff of the Department of Health was kept going at high pressure, the main gateways of the State were closely guarded by stationing officers at the border as well as by keeping a close surveillance over traffic arriving by sea, passengers being compelled to produce vaccination certificates and to report to a central depot at fixed periods. Nevertheless smallpox gained a footing in the southern part of the State. There were five cases, fortunately of the mild type.* Queensland evidently does not depend in times of emergency on clean living and sanitation to protect herself from smallpox, but, as do all other countries, recognizes the fact that in our present stage of knowledge vaccination, and vaccination alone, is our protection against the ravages of perhaps the filthiest, certainly one of the most fatal, of all known diseases, namely, smallpox.

Samuel B. Woodward.

---

*Annual Report State Board of Health, 1914.

SCARLET FEVER ANTITOXIN

The Commonwealth of Massachusetts
Department of Public Health
October 8, 1925.

Editor, Boston Medical and Surgical Journal:

The Department is now prepared to distribute scarlet fever streptococcus antitoxin to the physicians and hospitals of the Commonwealth. This antitoxin is prepared at the Antitoxin and Vaccine Laboratory by the method of Dochez and is supplied only in the concentrated form. The package will consist of a vial containing one minimum therapeutic dose of antitoxin with directions for its use. We recommend that this antitoxin be used only in the moderately severe and severe cases of scarlet fever, and we request that each physician using this serum will send to this Department complete reports of all cases treated with this product.

Until a more adequate supply is available, this product will not be sent to all distributing stations, but can be obtained upon application to the State Department of Public Health at the State House (Haymarket 4600, Line 38), or at the Antitoxin and Vaccine Laboratory (Jamaica 4127), and at the Boston City Department of Health, City Hall Annex (Congress 5100). Other distributing stations will be announced later.

This antitoxin, as in the case of all other biologic products distributed by the Commonwealth, will be supplied free of charge to physicians and hospitals within the State.

Thank you for extending to us the courtesy of your columns for this announcement.

Yours truly,
George H. Bigelow, M.D.,
Acting as Commissioner.

MASSACHUSETTS DEPARTMENT OF PUBLIC HEALTH

Diseases Reported for the Week Ending
October 3, 1925

Anterior poliomyelitis	7	Ophthalmia neonatorum	10
Chickenpox	27	Pneumonia, lobar	28
Diphtheria	84	Scarlet fever	94
Dog-bite requiring anti-rabic treatment	5	Septic sore throat	1
Encephalitis lethargica	2	Syphilis	45
Epidemic cerebrospinal meningitis	1	Suppurative conjunctivitis	10
German measles	6	Tetanus	1
Gonorrhea	142	Trachoma	2
Influenza	1	Tuberculosis, pulmonary	81
Malaria	1	Tuberculosis, other forms	16
Measles	130	Tuberculosis, hilum	1
Mumps	13	Typhoid	17
		Whooping cough	150

CONNECTICUT DEPARTMENT OF HEALTH

Morbidity Report for the Week Ending
September 26, 1925

Diphtheria	14	Bronchopneumonia	7
Last week	16	Chickenpox	3
Diphtheria bacilli carriers	4	Influenza	1
Scarlet fever	15	Mumps	1
Last week	14	Pneumonia, lobar	8
Typhoid fever	11	Poliomyelitis	2
Last week	18	Tuberculosis, pulmonary	16
Measles	8	Tuberculosis, other forms	2
Last week	12	Gonorrhea	20
Whooping cough	44	Syphilis	50
Last week	109		

NEWS ITEMS

NEWS ITEMS FROM THE HARVARD MEDICAL SCHOOL—Harvard Medical School opened on September 28 with an enrolment of 507 students. A reception was held for the students on Wednesday, September 30, under the auspices of the Phillips Brooks House Association. President Lowell and Dean Edsall addressed the students on various aspects of the medical profession and medical education. Assistant Dean Hale spoke on the history of the Harvard Medical School. After these addresses all adjourned to the students' recreation room for a social hour.

This year for the first time compulsory medical examination of students has been instituted at Harvard Medical School. The examinations are carried out at the Deaconess Hospital under the supervision of Dr. Roger I. Lee.

Dr. Hallowell Davis, of the Physiology Department, has been appointed adviser to pre-medical students in Harvard University. The purpose of this new office is to help students in planning their pre-medical work.

Harvard School of Public Health opened on September 28 with an enrolment of 31 students. Courses in Epidemiology, Physiology, Ventilation, Illumination, Bio-mathematics, and Sanitary Engineering started on this date.

The following appointments have been made in the School of Public Health:

Dr. Reg. A. Atwater, Instructor in Epidemiology.

Dr. Carlos Chagas, Lecturer in Tropical Medicine.

Dr. L. R. Cleveland, Assistant Professor of Protozoology.

Wm. E. Deeks, Lecturer in Tropical Medicine.

Dr. Francis B. Grinnell, Instructor in Bacteriology.

Dr. A. A. Hornor, Assistant in Tropical Medicine.

Dr. John L. Lewis, Assistant in Vital Statistics.

Dr. Fred W. Morse, Jr., Assistant in Bacteriology and Immunology.

Dr. Noel G. Monroe, Assistant in Industrial Medicine.

Dr. Halstead G. Murray, Assistant in Industrial Medicine.

Dr. Dwight L. Sisco, Assistant in Industrial Medicine.

Dr. Alexander H. Rice, Lecturer in Tropical Medicine.

NEWS ITEMS FROM TUFTS COLLEGE MEDICAL SCHOOL—Tufts College Medical School opened September 16 with the following enrollment: Fourth year, 110; third year, 114; second year, 120; first year, 146; total, 490.

There were over 600 applicants for admission to the freshman class.

A reception was given by the faculty to the freshman class, Monday, September 28, at which Dr. Stone, President of the Massachusetts Medical Society, gave an interesting talk.

Dr. M. H. Rogers has been appointed head of the Department of Orthopedic Surgery.

Dr. C. F. Painter has been appointed head of the Department of the History of Medicine.

GIFTS TO THE HARVARD MEDICAL SCHOOL—The General Education Board, Rockefeller Foundation, has made a gift of $350,000 for neurological teaching and research. This amount is to be added to the approximately similar amount employed by the university for this purpose and it is to be used in connection with the work at the Boston City Hospital as the new buildings there are developed. The work is to be under the charge of Dr. Stanley Cobb.

Dr. William Hunter Workman has given $25,000, the income to be used in assisting one or more needy and deserving graduates of the Harvard Medical School annually to pursue post-graduate studies in medicine in this country or abroad. The fund is to be known as the William Hunter Workman Scholarship.

NOTICE

CAMERON PRIZE LECTURES

According to an announcement in the British medical weeklies, Dr Harvey Cushing will give the Cameron-Prize Lectures at the University of Edinburgh during the week of October 18th. His subjects, as announced, are:

I. *The Third Circulation.*

II. *The Glandula Pituitaria as we now Know it.*

III. *Intracranial Tumours and the Surgeon.*

The following statement regarding this foundation occurs in the Edinburgh University Catalogue:

CAMERON PRIZE

This Prize was founded in 1878 by the late Dr. Andrew Robertson Cameron, of Richmond, New South Wales, with a sum of £2000. The regulations were remodelled by the Educational Endowments (Scotland) Commission, and the annual proceeds, which, after defraying the necessary expenses, amount to about £200, may be awarded annually to a person who, in the course of the five years immediately preceding, has made any highly important and valuable addition to Practical Therapeutics. It shall be in the power of the Senatus to require the person to whom the Prize is to be awarded, as a condition of his receiving it, to deliver a lecture or course of lectures on the addition to Practical Therapeutics so made by him, or to publish an account of such addition in such manner as the Senatus may prescribe. The Prize will not be awarded if, in the opinion of the Senatus, no addition to Practical Therapeutics has been made within the said period of five years of sufficient importance and value to justify the awarding of the Prize. The Prize is awarded at the Graduation Ceremonial in July. See Remodelled Regulations, p. 497 of Calendar for 1888-89.

1889, Monsieur Pasteur; 1890, Sir Joseph Lister, Bart.; 1891, Professor David Ferrier; 1893, Professor V. A. H. Horsley; 1895, Professor Behring; 1896, Professor Macewen; 1897, Professor Thomas R. Fraser; 1898, Dr. Sydney Monckton Copeman; 1899, Major David Bruce, R. A. M. C.; 1900, W. M. Haffkene, C. I. E.; 1901, Patrick Manson, C. M. G.; 1902, Major Ronald Ross, C. B.; 1904, Professor Niels R. Finsen; 1910, Professor August Bier; 1911, Dr. Simon Flexner, New York; 1914, Professor Paul Ehrlich; 1915, Sir Lauder Brunton, Bart., M.D.; 1920, Sir Robert Jones, K.B.E., C.B., F.R.C.S. (Eng. and Edin.); 1921, J. J. B. V. Bordet; 1922, Professor F. G. Hopkins; 1923, Professor J. J. R. Macleod.

REPORTS AND NOTICES OF MEETINGS

The Berkshire District will hold a regular meeting November 9, 1925, at which there will be a symposium on anesthesia. Dr. Babcock of Philadelphia, Dr. Gwathmey and Dr. Labat of New York will cover the various phases of this most extensive subject. The Berkshire Dental Society will be invited to attend.

CITY OF BOSTON HEALTH DEPARTMENT

Health Unit, 17 Blossom St.

October 10, 1925.

The next meeting of the West End Neighborhood Conference will be held at the Health Unit, 17 Blossom Street, Friday, October 16, 1925, at 3:45 P. M. Miss Lou Lombard, Consultant in Nutrition of the State Department of Health, will speak on "Nutrition in the Day's Work."

Miss Lombard has been carrying on some very intensive work for the State Department of Health and the subject matter of her paper is of great interest to all health and welfare workers.

This is the first meeting of the fall season and plans for a program for the coming year will be discussed freely.

Please manifest your interest in the work of the district and the West End Neighborhood Conference by attending this meeting.

Very truly yours,
Charles F. Wilinsky, M.D.,
Secretary,
West End Neighborhood Conference.

CENSORS' MEETING

The censors of the Suffolk District Medical Society will meet for the examination of candidates at the Medical Library, No. 8 The Fenway, Thursday, November 5th, 1925, at 4.00 o'clock.

Candidates should make personal application to the Acting Secretary, and present their medical diploma at least one week before the examination.

Richard H. Miller,
Acting Secretary.

270 Commonwealth Avenue.

THE BOSTON DISPENSARY

25 Bennet Street

At a meeting of the Clinical Staff of the Boston Dispensary, to be held Tuesday, October 20th, 1925, at 1:00 P. M., Dr. Francis D. Donoghue, Medical Adviser, Industrial Accident Board, State House, Boston, will speak on the subject:

"Industrial Accident and Health activities. The part the dispensary and out-patient department can play in the successful working out of the general purpose of such enactments."

Anyone desirous of attending this meeting will be invited on application to the Secretary of the Medical Staff.

Benjamin E. Wood, M.D.,
Secretary.

MASSACHUSETTS GENERAL HOSPITAL

Clinical Meeting

A Clinical Meeting will be held on Thursday evening, October 22, at 8:15, in the Administration Building, Massachusetts General Hospital, Fruit Street.

PROGRAM

1. Demonstration of Ward Cases—Members of the House Staff.
2. An Unusual Case of Peptic Ulcer—Dr. Arlie Bock.
3. Continental Surgical Clinics—Dr. D. F. Jones, Dr. E. P. Richardson.

Clinical meetings will be held thereafter on the second Thursday of each month throughout the winter and spring. A cordial invitation to attend these meetings is extended to physicians, medical students and nurses.

Committee on Hospital Meetings.

THE ANNUAL MEETING OF THE NEW ENGLAND SURGICAL SOCIETY

The Annual Meeting of the New England Surgical Society was held at Springfield, October 2nd and 3rd. The members began to arrive on the evening of October 1st and the Executive Committee were entertained at dinner at the Hotel Kimball that evening by the Committee of Arrangements, following which their usual meeting was held.

In the morning the members gathered in the operating rooms of the Springfield Hospital where Dr. Ralph H. Seelye resected a portion of the caecum for a large tumor which was thought to be tubercular and for which a colostomy had previously been performed. Dr. Dudley Carleton excised a large fecal fistula, the course of which was demonstrated by the x-ray and barium.

Dr. Frederick B. Sweet in the Chapin Memorial Building, removed a large ovarian cyst which was not only attached very properly to the broad ligament but seemed to be attached to every other structure in the abdomen as well. Dr. Sweet handled the situation with great skill and celerity.

At 10.30 the members adjourned to the very atttractive living room of the nurses home where the following cases were reported or shown:

By Dr. Kilburn:

1. A rupture of the deep urethra coincident with a fractured pelvis with extravasation of urine into the suprapubic space. This was later operated on by Dr. John H. Cunningham who did a reconstruction operation and who reported on this at the invitation of Dr. Kilburn.

2. Anomalies of the Urinary Tract. (1) A kink of the ureter following nephropexy. (2) A kink of the ureter on whom previous abdominal operations had been performed for appendectomy and adhesions without relief.

By Dr. Hagler:

1. A healed abscess of the tongue, interesting for its rarity.

2. An interesting case of ruptured uterus during labor, upon which an emergency Caesarean Section was performed procuring a live baby, followed by a hysterectomy.

3. A case of congenital wry neck.

4. A case of simultaneous duodenal and jejunal ulcers.

By Dr. Benner:

1. A second perforation of a gastric ulcer in the same patient with a gastro-enterostomy the second time.

2. Septicemia following abortion, remarkable for its high temperature of 107 to 108, with recovery.

By Dr. Seelye:

Dupuytren Contraction with multiple operations over many years with final excellent results.

By Dr. Rice:

Several interesting cases of Reconstruction Surgery of the hand.

By Dr. Sweet:

Six patients operated on for cancer of the large bowel.

By Dr. Seamen:

1. Two cases, sisters, with dilated ureters, one from stone, one probably from single kidney.

2. Pyonephrosis with large stone (4x1½ in.).

By Dr. Ober:

Dr. Ober showed an interesting simple hydraulic Aspirator and Air Compressor for suction and forced air.

By Dr. Schillander:

An Echonoccus Cyst of the liver and a gun shot wound of the liver, both shown for the considerable loss of liver substance in each with recovery.

By Dr. Gilchrist:

An unusual case of enormous pouching of the jejunum following a gastro-enterostomy.

By Dr. Hopkins:

Five interesting gall bladder cases, one of which was a traumatic dissection of the gall bladder from the liver so that at operation the gall bladder was found hanging by the common duct and cystic artery.

By Dr. Wheat:

1. **Semilunar dislocations. Open reduction**
2. **Hibb's operation**
3. **Osteomyelitis of Tibia, Fibula, and Scapula**
4. **Multiple Osteotomy**
5. **Hoke's operation**
6. **Volkmann's Paralysis**
7. **Congenital dislocation of hip.**

By Dr. Ober:

A case of Paget's Disease.

By Dr. Carleton:

1. Mass Bone Graft (2 cases)
2. Paralytic Club Feet in adults (2 cases)
3. Exostoses of Tarsal Scaphoid (3 cases)
4. Pneumococcus Spondylitis in Adults (2 cases)
5. Traumatic Osteomyelitis

Gun shot wound of thigh with neuritis and gas bacillus infection.

The enumeration of the above cases does not begin to tell the story of this most interesting morning.

At 1 o'clock, at the invitation of the Trustees of the Springfield Hospital, lunch was served in the corridors, and an opportunity was given for the members to renew old acquaintances.

At 2 P. M. the Scientific Session was held in the Assembly Hall and the folowing cases were read:

1. Lessons from Two Operative Fatalities. Farrar Cobb, M.D., Boston, Mass.

2. Massive Atelectasis as a Complication in Surgical Conditions. Report of Two Cases. Ernest L. Hunt, M.D., Worcester, Mass.

3. Discussion opened by Wyman Whittemore, M.D., Boston, Mass.

3. A case of Retroperitoneal Cyst. J. D. Barney, M.D., Boston, Mass.

4. Report of a Case of Volkmann's Contracture Involving the Pronator Quadratus. J. S. Stone, M.D., Boston, Mass.

5. The Study of Some Tumors of the Kidney. A. L. Chute, M.D., Boston, Mass.

6. Intercostal Drainage in the Treatment of Empyema. D. C. Patterson, M.D., Bridgeport, Conn.

Discussion opened by Wiliam F. Verdi, M.D., New Haven, Conn., and Alfred M. Rowley, M.D., Hartford, Conn.

7. The Fracture Committee of the American College of Surgeons. C. L. Scudder, M.D., Boston, Mass.

Discussion opened by Frederic J. Cotton, M.D., Boston, Mass.

These cases were thoroughly discussed with great interest.

At 4 o'clock the members were taken in automobiles to the Springfield Country Club where tea was served to both members and their ladies. Although the day was rather inclement, an idea at least, could be gained of the beautiful view of the Connecticut River Valley from this attractive Clubhouse situated on a height of land a short distance back from the river.

At 7 o'clock the members again assembled, this time at the Longmeadow Country Club, a comparatively new organization on the Springfield side of the river, where the Annual Dinner was held. Sixty-six members were present. The Dining Room with its vaulted ceiling, was arranged with the guest table along one side and small tabes for six or eight throughout the rest of the room.

The President, Dr. John W. Keefe, presided, and after a delicious dinner, he delivered the Presidential Address. There were no other speakers.

Saturday morning Dr. Mahoney held an operative clinic at the Mercy Hospital, performing a pan-hysterectomy for cancer of the uterus and a gastro-enterostomy for pyloric stenosis.

At 10.30 a dry clinic was held at which Dr. Naurison read a comprehensive paper upon the relation of organic heart disease to surgery. Dr. Wilder showed two cases of diverticula of the bladder with plates, a case of so called carbuncle of the kidney which perhaps might be called a metastatic cortical abscess and an unoperated case of large renal calculus. Dr. Mahoney showed a case of glossitis of the tongue of unexplained origin; an abscess of the lung with drainage by rib resection, with recovery; bone transplantation for fracture of both bones of the arm; double club feet with operation with excellent results.

At 12 o'clock cars were again taken for the Shriner's Hospital for Crippled Children through which the members were shown by Mr. Hendy and the House Officers. This wonderfully equipped hospital, complete in all respects, has been described in the JOURNAL before and is well worth a visit, particularly by those doctors interested in the orthopedic care of children.

At 1 o'clock a most sumptuous lunch was served by the Sisters of Mercy Hospital in the Recreation Room of the Nurses' Home, following which the Executive Session of the Society was held in the Assembly Hall, and after the usual routine business the following officers were elected:

President, William H. Bradford, M.D., Portland, Maine.

Vice-President, Ralph H. Seelye, M.D., Springfield, Mass.

Secretary, Ernest A. Wells, M.D., Hartford, Conn.

Treasurer, Peer P. Johnson, M.D., Beverly, Mass.

Recorder, Walter G. Phippen, M.D., Salem, Mass.

It was announced that the next meeting would be held in Boston.

The following new members were elected:

Paul B. Swett, M.D., Hartford, Conn.

Joseph Blake Drummond, M.D., Portland, Maine.

Philip P. Thompson, M.D., Portland, Maine.

Edward Hammond Risley, M.D., Waterville, Maine.

Clyde Leroy Deming, M.D., New Haven, Conn.

Lindley Dobson, M.D., Presque Isle, Maine.

In the afternoon the Scientific Session was continued with the reading of the following papers, which were all discussed at considerable length.

8. Notes on Treatment of Surgical Diabetics. R. C. Cochrane, M.D., Boston, Mass.

9. Iodine in the Treatment of Exophthalmic Goitre. E. P. Richardson, M.D., Boston, Mass.

10. Preparation of Patient for Anaesthesia. H. P. Stevens, M.D., Cambridge, Mass.

11. Intestinal Obstruction. G. A. Moore, M.D., Brockton, Mass.

Discussion opened by Carl M. Robinson, M.D., Portland, Maine.

12. Torsion of Duodenum from Post-Operative and Inflammatory Adhesions—with report of four cases. Dudley Carleton, M.D., Springfield, Mass.

13. Gall-Bladder Surgery. W. C. Seelye, M.D., Worcester, Mass.

14. Obstruction of the Common Bile Duct. P. E. Truesdale, M.D., Fall River, Mass.

All these papers will appear in the JOURNAL in due season.

About eighty members attended some or all of the meetings and all came away having thoroughly enjoyed their two days' stay in Springfield and with a feeling of profound appreciation and thanks for the entertainment provided by the Springfield Committee.

THE BERKSHIRE DISTRICT MEDICAL SOCIETY

Thursday evening, October 1, the Berkshire District held a regular meeting at the Maplewood Hotel in Pittsfield. John J. Moorhead, M.D., Professor of Surgery at the New York Post-Graduate Medical School, spoke on "Treatment of Some Minor Injuries." The subject was covered under the separate headings, Traumatic Wounds, Burns, Joints, Dislocations and Fractures.

Dr. Moorhead feels that all traumatic wounds are infected wounds and strongly favors the copious use of iodine ʒ i to saline solution O i. This he injects into the wound and washes surface after cutting away all severely crushed tissues. He favors the ordinary rubber band as a drain and insists that all dressings should be wet, suds of castile or green soap being the favorites for soaking the dressings.

All burns are wounds and should never be covered with oil or paraffin. Fresh air and sunshine or the use of two 50-watt electric lamps at a distance of twelve inches, and an electric fan, both in constant use, are his favorite methods of treatment.

Sprains and strains about joints call for the aspiration of any accumulated fluids, adhesive strapping, massage and activation from the start. All but weight bearing is insisted on, and that is urged unless there is persistent pain following trial attempts.

Dislocations and fractures should be reduced as early as possible in all cases. He says 50 per cent. of dislocations involve the shoulder, and his method of preference is to place patient prone on a table with arm hanging straight down over side, and, with ten pounds' weight hung on wrist, the shoulder will reduce itself in a few minutes in most cases. His second preference is to put patient on floor and pull him up with arm straight. In the Kocher method the second move is the important one and any further moves are useless. In fractures he feels early and steady traction to be most essential. Early activation is important, and early massage and sun exposures help in most cases.

Dr. Moorhead was very thorough in covering such a large field in one lecture and emphasized the essentials with apt illustrations.

SOCIETY MEETINGS

DISTRICT MEDICAL SOCIETIES

Essex North District Medical Society

Wednesday, January 6, 1926—The semi-annual meeting at Haverhill.

Wednesday, May 5, 1926—The annual meeting at Lawrence.

NEW ENGLAND STATE MEDICAL SOCIETIES

The annual meetings of the New England State Medical Societies are scheduled as follows:

Vermont State Medical Society—St. Johnsbury, Oct. 15-16, 1925.

Notices of meetings must reach the JOURNAL office on the Friday preceding the date of issue in which they are to appear.

BOOK REVIEW

The Faith, the Falsity and the Failure of Christian Science. By WOODBRIDGE RILEY, Ph.D., FREDERICK W. PEABODY, LL.B., and CHARLES E. HUMISTON, M.D., Sc.D. Revell Co., New York, 1925.

This study of Christian Science by three well-known writers on the subject, a psychologist, a lawyer and a physician, is a searching analysis of the facts relative to the founding, propagation and workings of this modern healing cult. Dr. Riley brings forward the evidence of the origins of Christian Science, paying special attention to Quimby, the real discoverer, and to Mrs Eddy, who, he considers, was definitely abnormal psychologically. Mr. Peabody, a Boston lawyer, long known for his pungent articles on the subject, takes a position, as he has in his previous works, that Christian Science is "a conscious imposition and deliberate fraud of its founder and discoverer—devoid alike of religious truth and healing power."

Dr. Humiston, a professor of surgery, at the University of Illinois, tells a melancholy tale of the "cures" and failures of Christian Science, giving many medical histories of cases where the usual therapy was neglected. He summarizes his opinions in a few sentences as follows: "Christian Science is an assassin of humanity. It supplants surgery with sorcery and tender solicitude with brutal neglect. Christian Science is the advance agent of scourge and pestilence, the ally of smallpox and consumption, the confederate of appendicitis and typhoid fever, and the executioner for cancer and intestinal obstruction." Strong words, but not too strong, as many a physician and public health officer will testify.